

Model. HQL260WR/320WR

Service Manual

1 A/V Circuit BLOCK Diagram

1) PC Mode

PC inputs, R, G, B, H, and V signals, are entered through D-Sub 15pin (DSUB1). They are entered into the DTV/PC selection switch, BA7657 (U30). When PC is se lected in MCU, the signals are entered into the AD converter, AD9883 (U21).

In AD9883, the signals are converted into 24 bits and entered into scaler gm6015.

BA7657 selects PC when pin16 is high and selects DTV when pin 16 is low.

AD9883 is controlled using the SDA/SCL line of pin 57/56.

PC input resolution is fh: 30~61k and fv: 56~75Hz, and the maximum resolution is 1024x768 at 75Hz.

If the resolution is above the specifications, an out of range message is displayed on the upper left hand corner of the screen. However, even if the resolution is within the specified range, if the input timing is different from the timing indicated on the manual, not supporded video, a message can be displayed. The Geometry Adjust function, which is used to adjust the picture position and size, should be carried out in the Windows desktop screen h. or full cross hatc The DTV signals, 480p, 720p, and 1080i, from the set-top box with a D-Sub out port, can be received through the D-Sub port and displayed in the PC mode.

2) DTV Mode

DTV signals are entered as Y, P b(Cb), and Pr(Cr) component signals, separated into Y, Cb, Cr and entered to BA7657.

If pin 16 is low, DTV signals are entered into ADC9883.

In the AD9883, like the PC signals, the DTV signals are converted to 24 bits and entered into scalar gm6015.

DTV signal is composed of 480p (50/60Hz) for SD, 720p (50/60Hz) for HD, and 1080i (50/60Hz). If the video signal, 480i component (DVD component output), is entered, the screen will not display properly. Also, because synchronization signal is in Y singal color Data is in Cr/Cb if the connections are incorrect, it will not operate properly

3) S-Video

S-Video signals are entered as Y/C signals, which is composed of Luminance color signals. The NTSC and PAL/SECAM are automatically detected by the video decoders, main VPC3230 and sub VPX3226, and converted to Y (8bits) and UV (8bits) and sent to the Scaler IC, gm6015

S-Video input and composite video input share a single audio jack. Therefore, while the pictures for the two inputs can be viewed at the same time, only one of the sounds can be heard.

4) Video

Video signal is a composite signal that combines the Luminance(Y) and color (CHROMA).

It is entered through the main VPC3230 and sub VPX3226,and sent to the sealer IC, gm6015.

IC, gm6015.

When the video input is displayed on the main screen,

if it is displayed on the PIP - screen

5) Scart Mode

Scart supports (CVBS Signals, RGB(Full-Scart) and Audio Right Left The S-Video Signals in not Supported.

CVBS Signal is recongnized by DC Level at PIN #8 in Scant and RGB Signal is recognized by DC Level at Pin #16

6) Supported PIP Table(PAL)

Main \ Sub	PC	DTV	TV	S-Video	AV1 Video	AV2 Video	Scart1(H)	Scart2(H)
PC	X	X	O	O	O	O	X	O
DTV	X	X	O	O	O	O	X	O
TV	O	O	X	O	O	O	O	O
S-Video	O	O	O	X	O	O	O	O
AV1 Video	O	O	O	O	X	O	O	O
AV2 Video	O	O	O	O	O	X	O	O
Scart1(F)	O	O	O	O	O	O	X	O
Scart2(H)	O	O	O	O	O	O	O	X

Supported PIP Table(NTSC)

Main \ Sub	PC	DTV	TV	AV1 Video	AV2 Video	AV3 Video	AV3S-VHS
PC	X	X	O	O	O	O	O
DTV	X	X	O	O	O	O	O
TV	O	O	X	O	O	O	O
AV1 Video	O	O	O	X	O	O	O
AV2 Video	O	O	O	O	X	O	O
AV3 Video	O	O	O	O	O	X	O
AV3 S-VHS	O	O	O	O	O	O	X

X: Not supported, O: Supported

7) Scaler Output

Scaler output signals, R, G, and B (each 8bits), are outputted as 24bit TTL signal, converted into LVDS signal in the LVDS converter, THC63LVDM83R(UI) and sent to the logic B/D in the LCD module.

8) Audio part

Audio input port for each mode:

Input	Port	Remark
PC/DTV	RCA L/R 1E A	Shared
Scart	Scart Jack L/R	
CVBS	RCA L /R 2EA	PAL
	RCA L/R 3E A	NT
S-VIDEO	RCA L/R 1EA	Shared

Audio input signal for PC, DTV, scart and CVBS modes is entered into the audio processor IC(MSP3410 or MSP3420), and audio input signal for VIDEO/S-VIDEO, and SCART CVBS modes entered into the audio processor.

As in other chips, the audio processor (MSP3410/20) uses the SCL and SDA line to control volume, and left/right balance and mono/stereo and SRS on/off, and Sound effect.

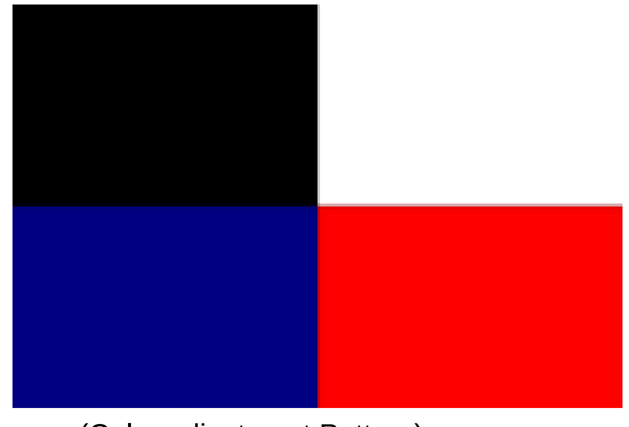
The L/R audio signal sent by MSP3410/20 is amplified in the amplifier, TDA1517(U3) and sent to the speaker.

TDA1517 support 5W(based on impedance 4 Ω) of output for each L/R.

Circuit Service Methods

1.Color Adjustment

I Refer to adjustment specifications
for information on making adjustments
When Color adjustment has to
be adjusted during service
If the module is replaced or
changed Flash ROM(U33),
It must be readjusted using PC,
Include Color pattern
Color Adjust methode(power off state)



(Color adjustment Pattern)

1) REMOCON:MUTE + 2 + 5 + 8 + POWER + OK
2) OSD B/D :VOLUME(DOWN)+ POWER(OSD B/D) + POWER(REMOCON) + OK

2.ENTERED INTO AGING MODE at TV Source

1) REMOCON:MUTE + 1 + 4 + 7 + POWER ;REMOVE-POWER OFF(OSD B/D)
2) OSD B/D :MENU + CH↓ POWER(REMOCON) ;RESET-POWER OFF(OSD B/D)

3.CHECKING MCU VERSION

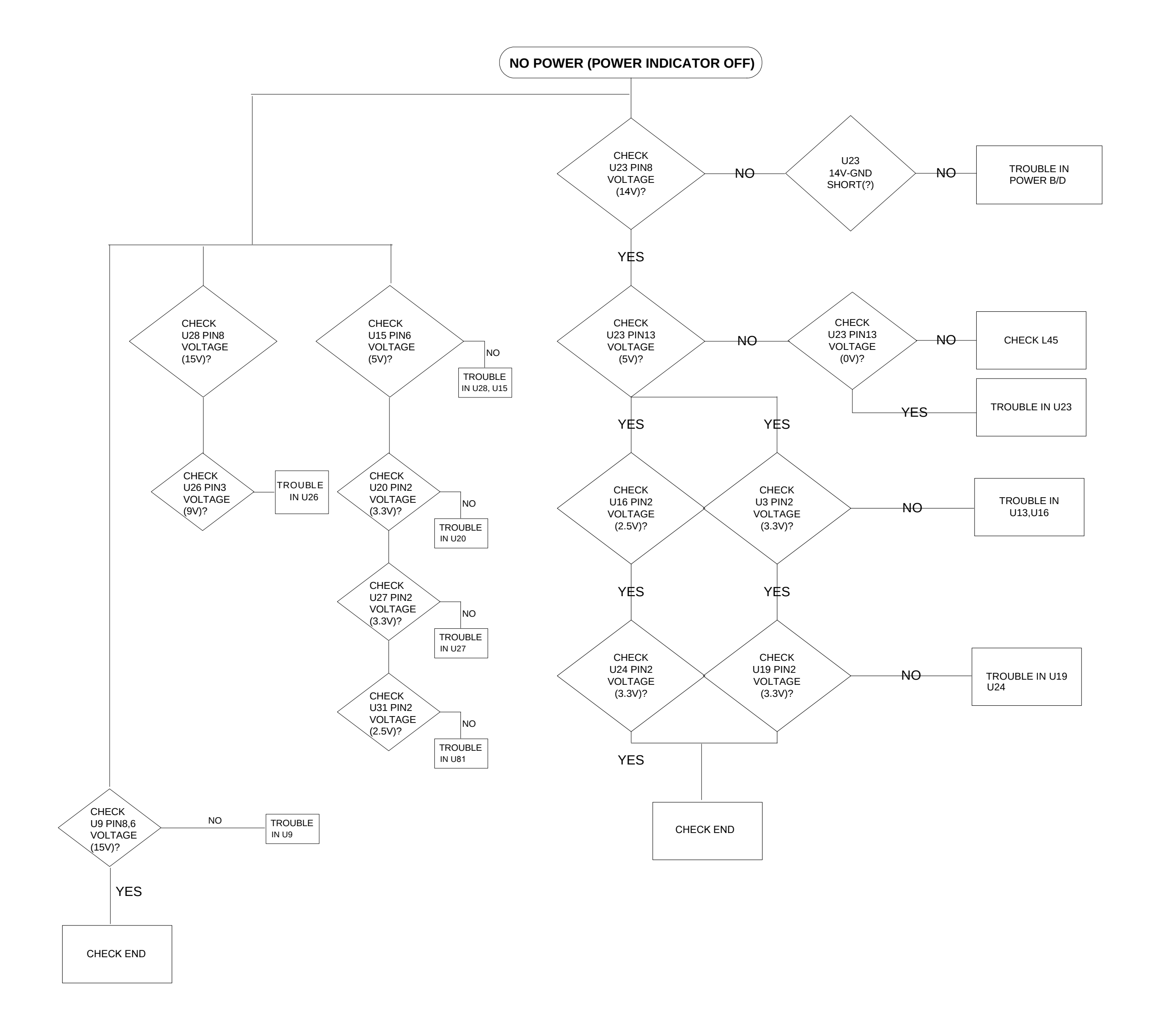
1) REMOCON:ADVANCED + DISPLAY-NTSC MODEL
2) REMOCON:ADVANCED + INFORMATION-PAL MODEL

4.SET INITIAL METHODE

1) REMOCON:MUTE + 3 + 2 + 1 + POWER
2) OSD B/D :MENU + CH↑ POWER(REMOCON)

Trouble Shooting Guide

1. No Power



2. No Raster

NO RASTER

BASIC CHECK

CHECK INVI-1, INVI-2 PANEL Vcc?
- NO → CHECK U9 PIN5 Vcc(14V)? — NO → TROUBLE IN U9
- NO → CHECK U9 PIN7 Vcc(14V)? — NO → TROUBLE IN U9
- YES ↓

CHECK U25 PIN35/36 I2C DATA
- NO → TROUBLE IN U25
- YES ↓

CHECK LVDS B/D, PIN1 Vcc(HIGH)?
- NO → CHECK U25 PIN46 Vcc(0V)?
  - NO → CHECK U33
  - YES → CHECK R160, R161, Q15
- YES ↓

CHECK LVDS B/D, PIN3 BRIGHTNESS Vcc(HIGH)?
- NO → CHECK U25 PIN45 Vcc(0V)?
  - NO → CHECK U33
  - YES → CHECK R166,R172,OR3, Q16
- YES ↓

CHECK LVDS B/D, U1 LVDS DATA OUT
- NO → CHECK U11 RGB DATA OUT
  - NO → TROUBLE IN U11
  - YES → TROUBLE IN U1
- YES ↓

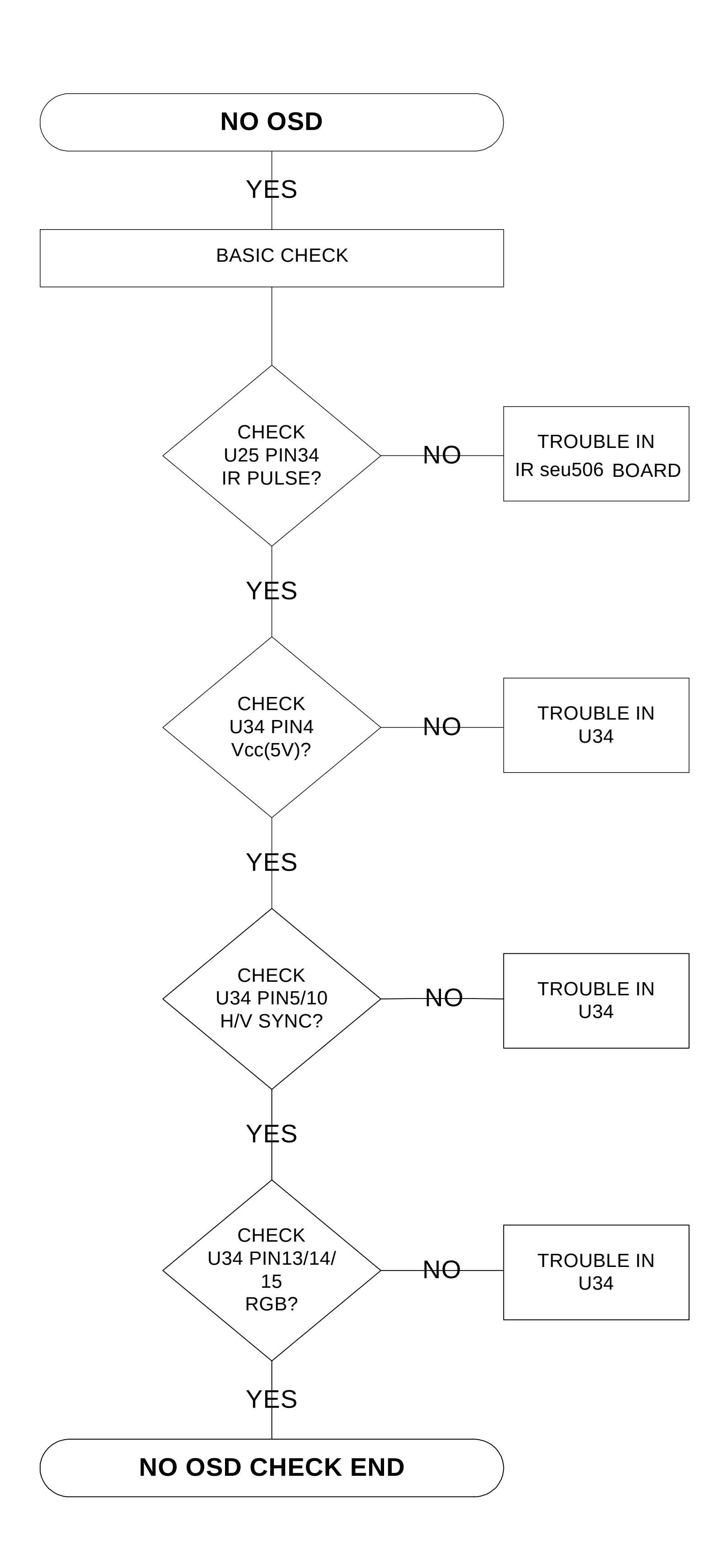
CHANGE INVERTER

CHANGE LCD PANEL & SIGNAL CABLE

YES

CHECK END

3. No On Screen Display



4. Basic Check

BASIC CHECK

YES

NO POWER CHECK

YES

CHECK U18 PIN3 /RESET? — NO → TROUBLE IN U18

YES

CHECK U25 PIN41 /RESET(3.3V)? — NO → TROUBLE IN U25

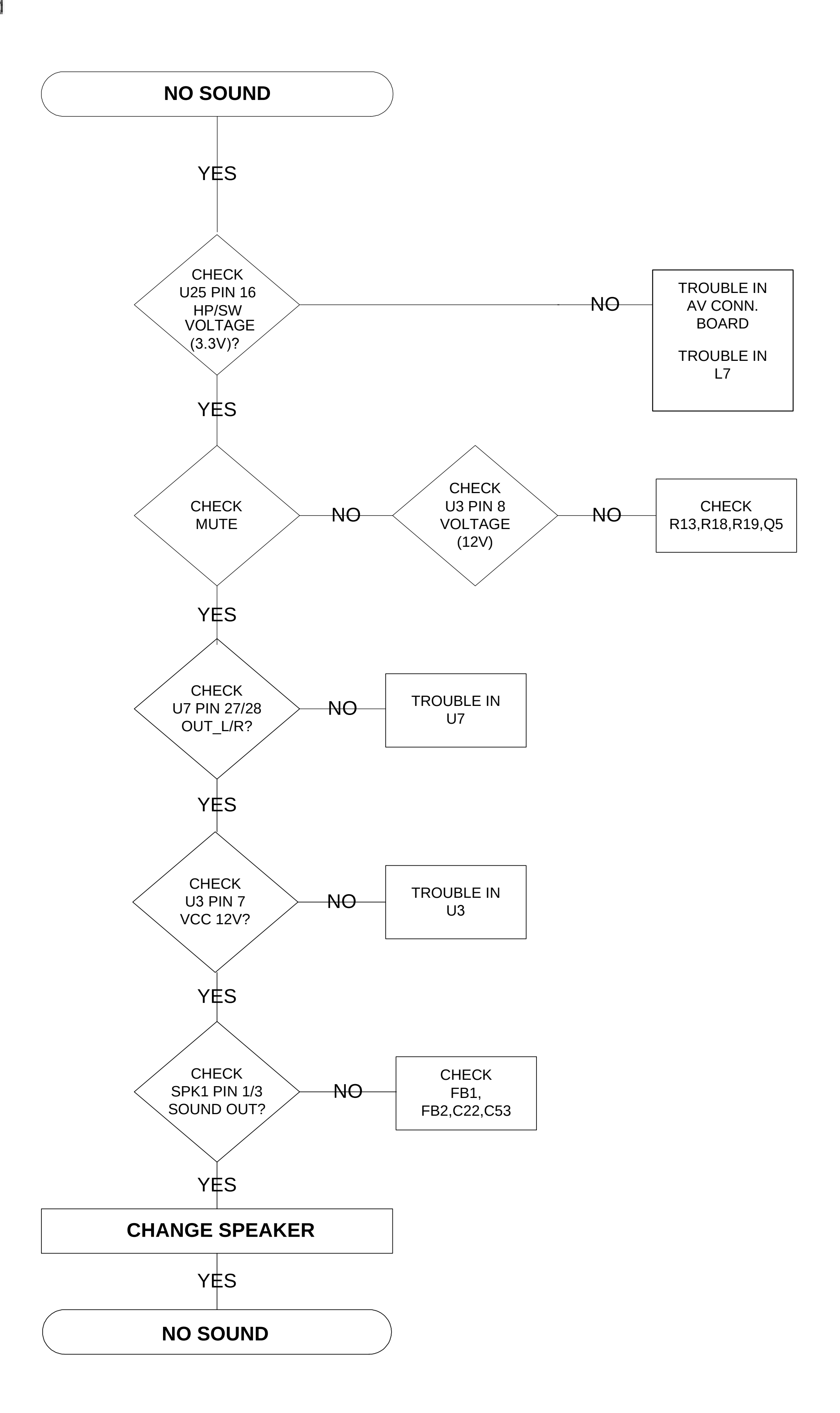
YES

CHECK CRYSTAL OSC.? — NO → TROUBLE IN Y1,Y2,Y3,X1,X2 for MAIN BOARD → TROUBLE IN X1 for Tuner BOARD

YES

BASIC CHECK END

5. No Sound


NO SOUND
YES
CHECK
U25 PIN 16
HP/SW
VOLTAGE
(3.3V)?
NO
TROUBLE IN
AV CONN.
BOARD
TROUBLE IN
L7
YES
CHECK
MUTE
NO
CHECK
U3 PIN 8
VOLTAGE
(12V)
NO
CHECK
R13,R18,R19,Q5
YES
CHECK
U7 PIN 27/28
OUT_L/R?
NO
TROUBLE IN
U7
YES
CHECK
U3 PIN 7
VCC 12V?
NO
TROUBLE IN
U3
YES
CHECK
SPK1 PIN 1/3
SOUND OUT?
NO
CHECK
FB1,
FB2,C22,C53
YES
CHANGE SPEAKER
YES
NO SOUND

4.4. FORWARD

This document defines the design and performance requirements for Imagequest 26" LCD COLOR TV(HQL260/320WR).

It is capable of displaying maximum HQL260 1280XRGBX768, HQL320 1366XRGBX768 resolution image. The LCD TV screen comes equipped with a dedicated terminal board which is designed to a Accommodate an image signal from a variety of multimedia source such as DVD players, VCRs Camcoders and set-top box,CATV

5.5. GENERAL DESCRIPTION

5.1 Features

* A choice of standard 4:3 and advanced 15:9 and 16:9 and Panorama aspect ratios
* High luminance and contrast ratio, low reflection and wide viewing angle
* PIP(Picture-In-Picture)
* Noise Reduction
* Favorite Channel
* Variable Sound Setting
* Variable Screen Setting
* SRS-WOW (An Extraordinary Enhancement for Music and Entertainment)



Authorization Number : 1018,

Completion Date : 1/29/04

* Closed Caption
* Full multimedia capability
* V-CHIP(Parental Lock)-Only The continent of America

5.2 Applications

* Home Theater
* Game and Shopping Mall
* Public Information Display
* Office Meeting Room

5.3 General Specification

(*) PAL

Parameter	Specification,26"(32")	Unit	Remarks
Effective Size(H)X(V)	566.4 X 339.84(697.68 X 392.25)	mm	
Input Voltage	AC 100 ~ 240, 50/60Hz	V	
Display Type	Digital		
Input Type(JACK)	VIDEO INPUT	3(2)	
	S-VIDEO INPUT	1	Audio Common with VIDEO
	COMPONENT INPUT(DTV)	1	Audio L/R 1

	PC Analog INPUT			1	Audio Common with DTV
	RF-IN PUT				Analog
	Scart Input	Full	RGB,CVBS(SYNC)	2	Audio L/R (PAL)
		Half	CVBS		
	INPUT POWER			1	AC100V~240V
Output Type	Scart Output	Full	CVBS	2	Audio L/R (PAL)
		Half	CVBS		
	Headphone			1	
	Speaker L/R			1	Audio L/R

Parameter		Specification	Unit	Remarks
Pixels (H) X RGBX (V)		1280 X 768 (1366 X 768)	pixels	
Pixel pitch (H) X (V)		0.4425 X 0.4425 (0.51075 X 0.51075)	mm	
Pixel arrangement		RGB Vertical stripe(Asymetric)		
Cooling		Fanless		
Dimensional outline		814(W) X 491(H) X 223(D)	mm	
Weight	Net	16.0	Kg	
	Gross	20.5	Kg	
Control Type		Remote Control : Interfaced Type		
Screen Size		26”/32” (16:9 /15;9/4:3)		

5.4 **TV/ VIDEO System**

- TV system : PAL - PAL B/G, D/K, I, L, L’, M
- RF signal : VHF, UHF, CABLE TV
- Sound modulation : PAL - AM/FM-Mono, FM-Stereo(A2, D/K), NICAM
- Color system : PAL, SECAM

6. GENERAL REQUIREMENTS

6.1 TEST EQUIPMENT

The reference signal source is calibrated Astro VG-828 Imager and shibasoku TG 19-BC. The use of other signal generators during qualification and production is acceptable provided the product complies with this specification.
Photometry measurements shall be made with a Minolta CA-110 .

6.2 MEASURING METHODS FOR LCD DISPLAY

The standards cited are as follows:
After stabilizing and leaving the panel alone at a given temperature for 30 min, the measurement should be executed. Measurement should be executed in a stable,windless,and dark room. 30 min after lighting the back-light.
Photodetector is BM-5A,BM-7,PR650 and Asingle lamp current is 4.5mA Environment condition :

Ta =25+/- 2

7. ELECTRICAL CHARACTERISTICS

This section specifies the electrical requirements of the LCD TV

7.1 VOLTAGE PROTECTION

The LCD TV electronics shall not be damaged with power input voltage ranging from 100 to 24OV AC.

The LCD TV electronics shall have built in protection against reverse input Voltage.

7.2 Power ON/OFF Switch

The LCD TV shall have a power control switch visible and accessible on the top of the LCD TV.

7.3 Power Indicator LED

The LCD TV shall make use of an LED type indicator located on the front of the LCD TV. The LED Color shall indicate the power states as follows.

* Power ON-LED is Green
* Power Off(Stand-by)- LED is Red(<1.8 watts)

7.4 Signal Input / Output specification

Parameter			Specification	Unit	Remarks
Speaker	Impedance		4(L) + 4(R)	Ω	
	Output		5	W	
Audio	Freq. Character		0.1 ~ 1.2	KHz	
	T.H.D		< 10	%	
	HUM		< 1	V	
	Output		5(L) + 5(R)	W	
Power Consumption	Max		125+10%	W	NOTE 1
	ST-BY		<1.8	W	
Composit Video Input			1	Vp-p	
Scart Input	Full	RGB	0.7	Vp-p	
		CVBS	1	Vp-p	
	Half	CVBS	1	Vp-p	
S- Video Input	Y		1	Vp-p	
	C		0.286	Vp-p	NTSC
Component Input	DVD	Y	1	Vp-p	720 * 480i
		Pb	0.7	Vp-p	
		Pr	0.7	Vp-p	
	DTV	Y	1	Vp-p	1920 * 1080i
		Pb	0.7	Vp-p	1280 * 720 p
		Pr	0.7	Vp-p	720 * 480 p
PC Input	RGB		0.7	Vp-p	VGA ~ XGA & HDTV (1080i, 720p, 480p)
	H Frequency		31 ~ 61(TTL Level)	KHz	
	V Frequency		56 ~ 75(TTL Level)	Hz	
Audio Input	L, R		0.5	Vrms	Mono or stereo
Scart Output	Full	CVBS	1	Vp-p	
	Half	CVBS	1	Vp-p	

NOTE 1 .Power source : AC120V 60Hz, 220V 50Hz
.It is measured on full screen white pattern

7.5 Warm-Up Time

The warm-up time shall be 30minutes minimum. At the end of the warm-up period, no adjustment of

7. 6 TV Input (NTSC)

- Channel VHF Low BAND : 2(55.25MHz) ~ E(145.25MHz)
  High BAND : F(151.25MHz) ~ W+25(445.25MHz)
  UHF BAND : W+26(451.25MHz) ~ 78(855.25MHz)
- Intermediate Frequency PIF : (45.75)MHz, CIF : (42.17)MHz, SIF : (41.25)MHz
- Input Impedance : UHF/VHF Terminal (75) Ω, Unbalanced
- Band Chang – Over System : (PLL Control System)
- Tuning System : (Electronic Tuning System With PLL)

* DEMOD. CHARACTERISTICS

NO.	ITEM		SPECIFICATIONS			UNIT	NOTES
			MIN.	TYP.	MAX.		
1-1	Video Output Level		1.6	2.0	2.4	Vp-p	* Input Level : 70dBu * Video Signal : 87.5% AM Mod. STD Color Bar
1-2	Video Freq. Response 1 MHz 2 MHz 3 MHz 3.58 MHz		 -3.0 -3.5 -3.5 -4.5	 -0.0 -0.0 -0.0 -1.0	 +2.5 +3.0 +3.0 +1.5	dB	* Input Level : 70dBu * Video Signal: 87.5% AM Mod. 30% Multi-Burst Signal * Reference : 0.1 MHZ
1-3	Luminance S/N Ratio		44	48	-	dB	* Input Level : VHF,UHF : 70dBuV * Setting of S/N Meter - Input Level : 0.714p-p - HPF : 100KHz, LPF : 4.2MHz - Sub Carrier : Trap ON * Video Signal : 87.5% AM Mod.100% White
1-4	NOISE LIMIT SENSITIVITY		-	-	50	dBuV	Video Signal : 100% White Sig. AT. S/N = 30dB
1-5	AFT ALIGNMENT ACCURACY (VHF 11CH)		+50	0	-50	KHz	* Alignment Center : 1.9V * IF Input Level : 70dBuV * P/S : -7dB * Standard Color Bar : 87.5%
1-6	Chroma Distortion	DP	-10	4	10	DEG	* Input Level : 70dBuV * Video Signal: 87.5% AM Mod. 5 Step Linearity Signal
		DG	-10	5	10	%	
1-7	BURST LEVEL		20.0	28.6	34.3	%	* Input Level : 70dBuV * Video Signal: 87.5% Mod. Standard Color Bar Sig.
1-8	LUMI. LEVEL		64.3	71.4	78.5	%	* Input Level : 70dBuV * Video Signal: 87.5% Mod. Standard EIA Color Bar Sig.
1-9	SYNC. LEVEL		25.7	28.6	31.5	%	* Input Level : 70dBuV * Video Signal: 87.5% Mod. Standard Color Bar Sig.
1-10	SIF OUTPUT LEVEL		65	75	-	dBuV	* 1KHz / + - 25KHz dev. * Standard Color Bar : 87.5% Mod. * P/S Ratio : -7dB * Input Level : 70dBuV

7.6 TV Input(PAL)

* APPLICATION

- Receiving System : (NTSC STANDARD SYSTEM)
  - Channel VHF Low BAND : E2(48.25MHz) ~ S10(168.25MHz)
    High BAND : E5(175.25MHz) ~ S41(463.25MHz)
    UHF BAND : E21(471.25MHz) ~ E69(855.25MHz)
  - Intermediate Frequency PIF : 38.9MHz (PAL B/G, I, D/K, SECAM L)
    33.9MHz (SECAM L')
    SIF : 33.4MHz (B/G), 32.9MHz(I), 32.4MHz(D/K ,SECAM L)
    40.4MHz(SECAM L')
  - Input Impedance : UHF/VHF Terminal (75) Ω, Unbalanced
  - Band Chang – Over System : (PLL Control System)
  - Tuning System : (Electronic Tuning System With PLL)

* DEMOD. CHARACTERISTICS

NO.	ITEM		SPECIFICATIONS			UNIT	NOTES
			MIN.	TYP.	MAX.		
1-1	Video Output Level		2.0	2.3	2.6	Vp-p	* Input Level : 70dBuV * Video Signal : PAL(87.5%), SECAM (90%) AM Mod. STD Color Bar
1-2	Video Freq. Response 1 MHz 2 MHz 3 MHz 4 MHz 4.43 MHz		 -1.0 -1.5 -2.5 -3.0 -4.0	 -0.0 -0.0 -0.0 -0.0 -1.0	 +1.5 +2.0 +2.5 +3.0 +3.0	dB	* Input Level : 70dBuV * PALI: 87.5% AM Mod. * SECAM : 90% AM Mod. * FULL Sweepl * Reference : 0.5 MHZ
1-3	Luminance S/N Ratio		40	47	-	dB	* Input Level : VHF,UHF : 70dBuV * Setting of S/N Meter - HPF : 100KHz, - LPF : 5.0MHz * Video Signal : 87.5% AM Mod.100% White
1-4	NOISE LIMIT SENSITIVITY		-	43	51	dBuV	Video Signal : 100% White Sig. AT. S/N = 30dB
1-5	AFT ALIGNMENT ACCURACY		+50	0	-50	KHz	* Alignment Center : 1.9V * IF Input Level : 90dBuV * P/S : -10dB * Standard Color Bar : PAL(87.5%) SECAM L' (90%) * Center Frequency : PAL (38.9 MHz) SECAM L' (90%)
1-6	Chroma Distortion	DP	-10	5	10	DEG	* Input Level : 70dBuV * Video Signal: 87.5% AM Mod. RAMP Signal
		DG	-10	5	10	%	
1-7	BURST LEVEL		20.0	30	36	%	* Input Level : 70dBuV * Video Signal: 87.5% Mod. Standard Color Bar Sig.
1-8	SIF OUTPUT LEVEL		70	75		dBuV	* Input Level : 70dBuV * Video Signal: Standard Color Bar Sig. * CH : S20 * P/S Ratio : -10dB
1-9	AUDIO S/N RATIO		40	50		dB	* 1KHz±50KHz Dev. * Video Signal: 87.5% Mod. Standard Color Bar Sig. * Use CCITT FILTER

NTSC/PAL

1-10	AUDIO DISTORTION RESPONSE		-	0.6	3.5	%	* 1KHz±50KHz Dev. * Standard Color Bar : 87.5% Mod. * De-emphasis ON
1-11	AUDIO FREQ. RES-PONSE	50Hz	- 3	0	+ 3	dB	* 50Hz ~ 10KHz * 1KHz±50KHz Dev *Standard Color Bar * De-emphasis ON
		10KHz	- 4	- 1	+ 3		
1-12	AUDIO OUTPUT LEVEL		0.3	.06	.08	Vrms	* 1KHz±50KHz Dev * Standard Color Bar : 87.5% Mod.

7.7 Analog R.G.B Input (PC)

The input signal shall be applied to the display device through a signal cable, which must be intended as part of the monitor. A signal connector shall be a shielded 15pin D- Sub connector and signal cable shall be Black or White, 1.50±0.05 meter long.

The interfacing method described above requires 7 input lines :

1 - Red (red video)
2 - Green (green video)
3 - Blue (blue video)
4 - H Sync (horizontal synchronization)
5 - V Sync (vertical synchronization)
6 - SDA
7 - SCL

The reference video controller (the device used for adjustment and test) will guarantee the performances described below (measured on the output connector).

- Video signals on 75 ohm termination to the ground

Red, Green & Blue Video (refer to Fig.3.1)

Level : 0 to 0.7 Vp-p Polarity : Positive

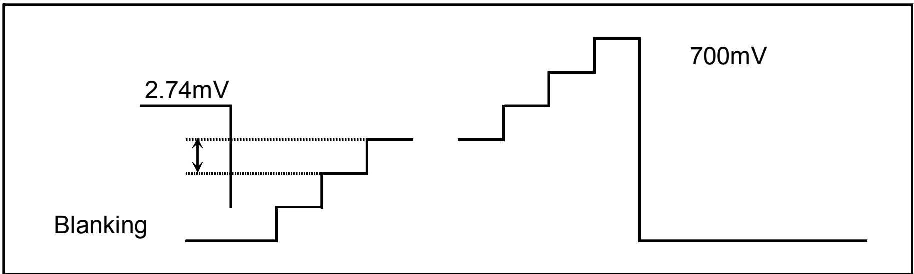


Fig. 3.1 - Video Signal

- Synchronization signals

Polarity : Positive or Negative

* This monitor shall not be damaged by improper sync timing and pulse duration, absence of sync, or abnormal input amplitude (video and/or sync too large too small).

7.7.1 Timing

This monitor shall be capable of displaying following video timing chart.

* Timing Chart

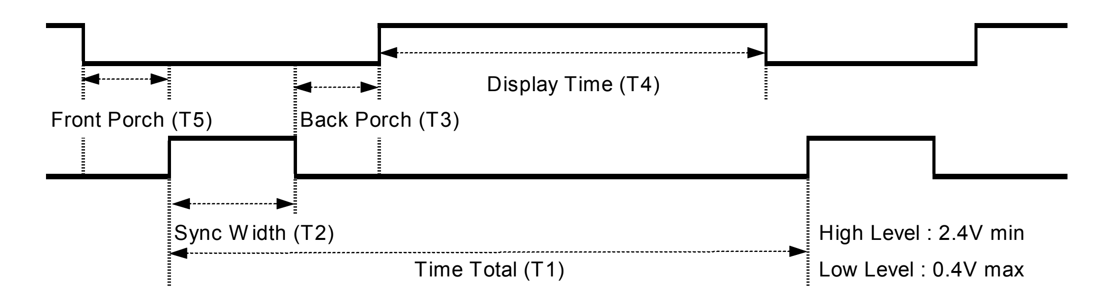


Fig. 3.2 - H-Sync

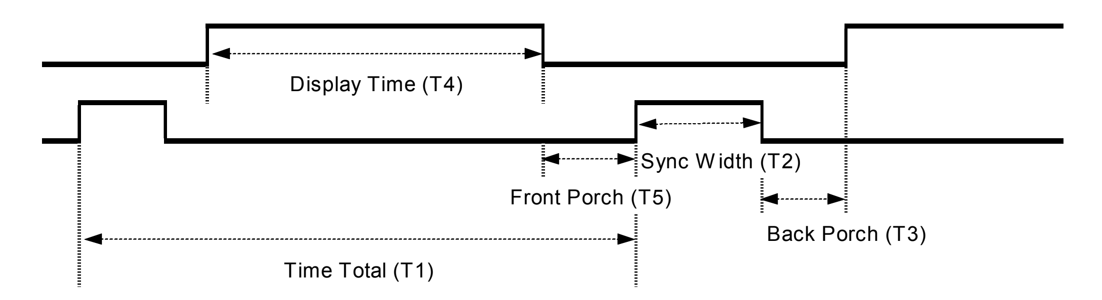


Fig. 3.3 - V-Sync

7.7.2 Preset-Mode Timing

The timing shown in the following table will be factory preset for display.

- preset mode table

Horizontal	Pixel	640	720	640	640	640	800	800	800	1024	1024	1024
Frequency	KHz	31.469	31.469	31.469	37.861	37.500	37.879	46.875	48.077	48.363	56.476	60.023
Period (T1)	µs	31.778	31.778	31.778	26.413	26.667	26.400	21.333	20.800	20.677	17.707	16.660
Sync Width (T2)	µs	3.813	3.813	3.813	1.270	2.032	3.200	1.616	2.400	2.092	1.813	1.219
Back Porch (T3)	µs	1.887	1.907	1.907	3.810	3.810	2.200	3.232	1.280	2.462	1.920	2.235
Active (T4)	µs	25.422	25.422	25.422	20.317	20.317	20.000	16.162	16.000	15.754	13.653	13.003
Front Porch (T5)	µs	0.636	0.636	0.636	0.508	0.508	1.000	0.323	1.120	0.369	0.320	0.203

Vertical	Lines	350	400	480	480	480	600	600	600	768	768	768
Frequency	Hz	70	70.080	59.950	72.809	75.000	60.316	75.000	72.188	60.004	70.069	75.029
Period (T1)	ms	14.268	14.268	16.683	13.735	13.333	16.579	13.333	13.853	16.666	14.272	13.328
Sync Width (T2)	ms	0.064	0.064	0.064	0.079	0.080	0.106	0.064	0.125	0.124	0.106	0.050
Back Porch (T3)	ms	1.906	1.080	1.048	0.528	0.427	0.607	0.448	0.478	0.600	0.513	0.466
Active (T4)	ms	11.122	12.711	15.253	12.678	12.800	15.840	12.800	12.480	15.880	13.599	12.795
Front Porch (T5)	ms	1.176	0.413	0.318	0.026	0.027	0.026	0.021	0.770	0.062	0.053	0.017
Interlaced	Y/N	N	N	N	N	N	N	N	N	N	N	N
Sync Polar	H	+	-	-	-	-	+	+	+	-	-	+
	V	-	+	-	-	-	+	+	+	-	-	+

8.1. USER INTERFACE

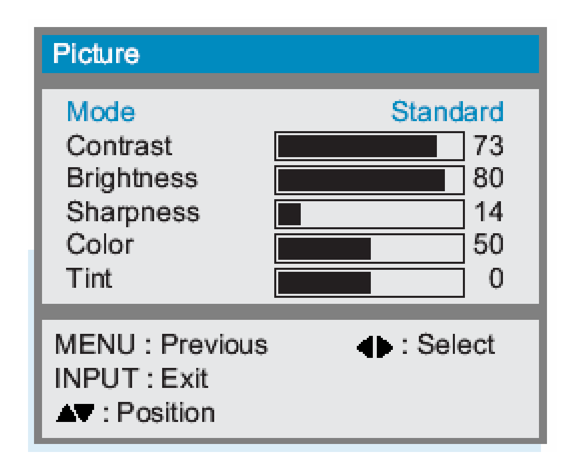
8.1 User Controls

The display device shall have following On-Screen Display controls.

8.1.1 User Control Panel

Name of button	Direct control (Hot Key)	In the OSD window
Source	Main source change	X
Menu	Display OSD window	Exit present selection or OSD
−	Turn the volume down	Move Left or Select
+	Turn the volume up	Move Right or Select
▼	Channel down	Move Down
▲	Channel up	Move Up
Power	Turn off/on the TV	Turn off/on the TV

8-1.2 Control Parametel(OSD)



- Mode : By this menu, a user can change the picture mode. There are three fixed mode (Standard, Sport, Natural, Mild) and one Custom mode. Only selecting Custom mode, a user can change each of parameters given below.

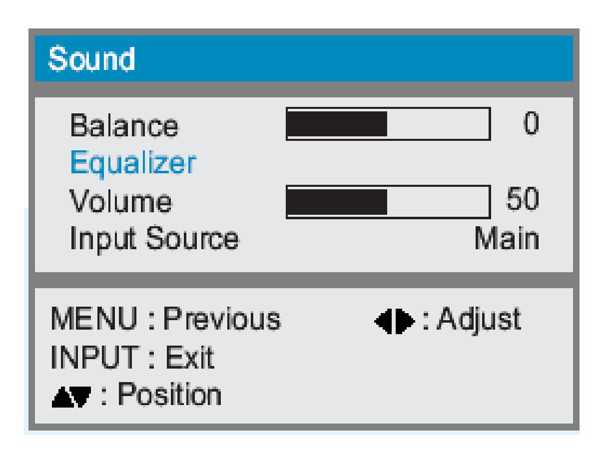
Contrast : By this menu, a user can control the contrast value of the video image.

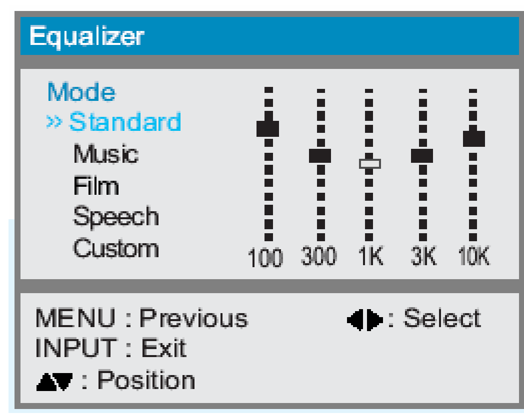
Brightness: By this menu, a user can control the brightness value of the video image.

Sharpness : By this menu, a user can control the sharpness of the video image.

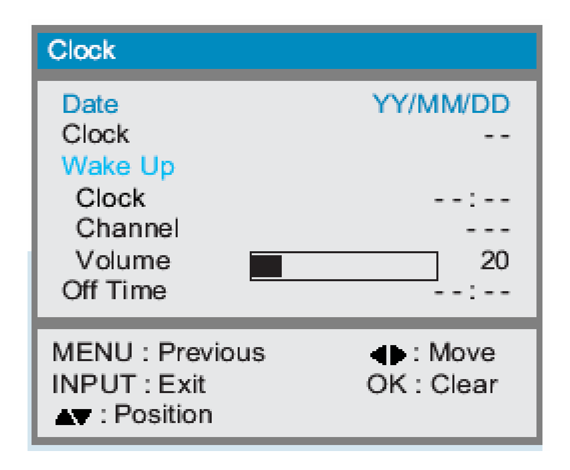
Color : By this menu, a user can control the saturation of the video image.

Tint : By this menu, a user can control the tint of the video image.

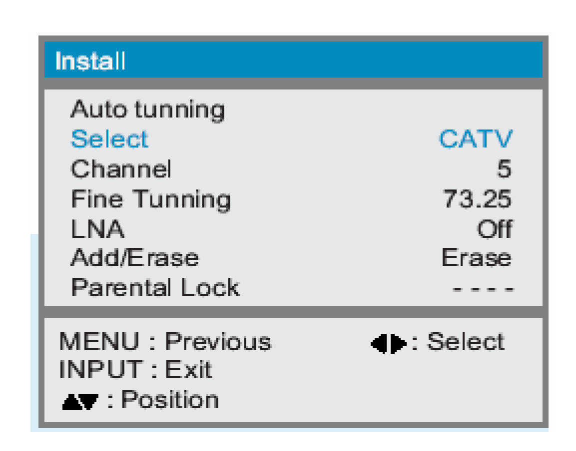


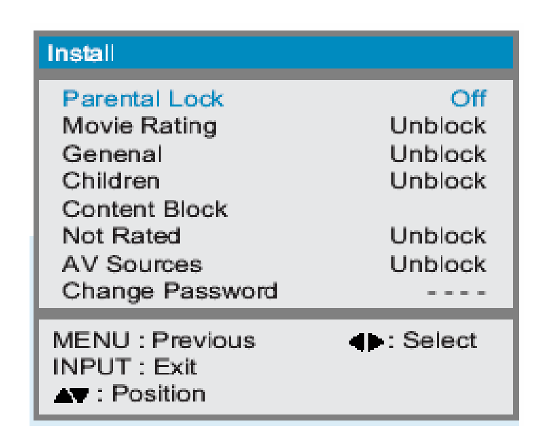


- Volume : By this menu, a user can control the audio volume.
- Balance : By this menu, a user can control the audio balance (left or right).
- Equlizer : By this menu, a user can change the audio frequency spectrum. There are four fixed mode (Standard, Music, Film, Speech) and one Custom mode. Only selecting Custom mode, a user can change each gain of frequency.
- Input Source : By this menu, a user can select the TV sound mode.(Main/Pip)



- Date : By this menu, a user can set current date (YY/MM/DD).
- Clock : By this menu, a user can set current time
- Wake Up
    - Clock : By this menu, a user can set turn on time
    - CHANNEL / VOLUME : By this menu, a user can set channel and volume when this set turn on.
- Off Time : By this menu, a user can set turn off time.





- Auto tunning : By this menu, this set searching channel automatically. (Air & Cable)
- Select : By this menu, a user select TV(air) & CATV
- Channel : By this menu, a user can choose channel that user want to edit. A user can select every channel in user's TV system (Not only in the TV's memory).
- Fine Tunning : By this menu, a user can tune the TV channel finely.
-. LNA : By this menu, a user can use this function when the signal is weak, distorted
- Add/Erase : By this menu, a user can add or erase channel in the TV's memory.
- Parental Lock : By this menu, a user can set "Parental Lock" (Default P/W : 0119)

< Parental Lock reference>

* TV Rating Limit : Set block each TV rating.

TV-Y : YOUNG CHILDREN FV : Fantasy Violence

TV-Y7 : CHILDREN 7 AND OVER
TV-G : GENERAL AUDIENCE
TV-PG : PARENTAL GUIDANCE
TV-14 : VIEWERS 14 AND OVER
TV-MA : MATURE AUDIENCE

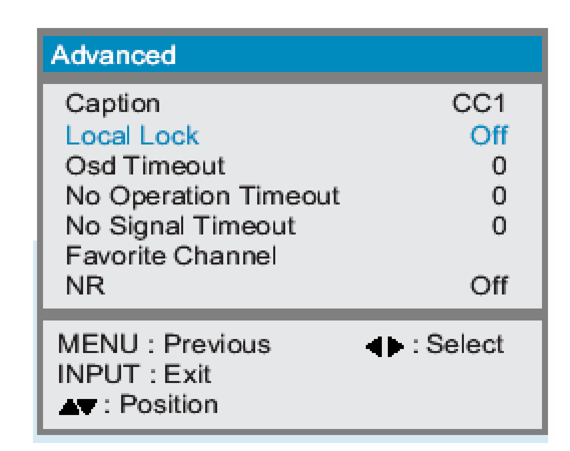
V : Violence
S : Sexual situation
L : Adult Language
D : Sexual suggestive Dialog

* MOVIE RATING LIMIT : Set block each movie rating.

G : GENERAL AUDIENCES
PG : PARENTAL GUIDANCE
PG-13 : PARENTAL GUIDANCE FOR CHILDREN UNDER 13
R : RESTRICED
NC-17 : NO ONE UNDER 17
X : ADULTS ONLY



- LANGUAGE : By this menu, a user can change OSD language.
  (English, French, German, Italian , Spanish)



- CLOSED CAPTION : By this menu, a user can see the Closed Caption.
  (OFF, CC1, CC2, CC3, CC4, Text1, Text2, Text3, Text4)
- Local Lock : By this menu, a user can select Local Lock type to lock key control.
  (off , once , always)

-. Osd Timeout : By this menu, a user can set Osd Timeout.

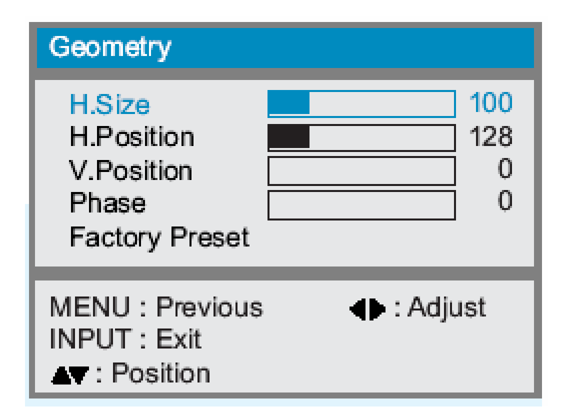
NTSC

-. No Operation Timeout : Automatically turns the power off if there is no button pressed for a period of time after AUTO Wake-Up turns the power on

-. No Signal Timeout : Automatically turns the power off if there is no broadcast signal or button pressed for some time

- Favorite Channel : This function allows you to store up to five channels or input sources you use frequently.

- NR : By this menu, a user can reduce the video noise.(On/Off)



- H-SIZE : By this menu, a user can adjust the horizontal size of PC mode.

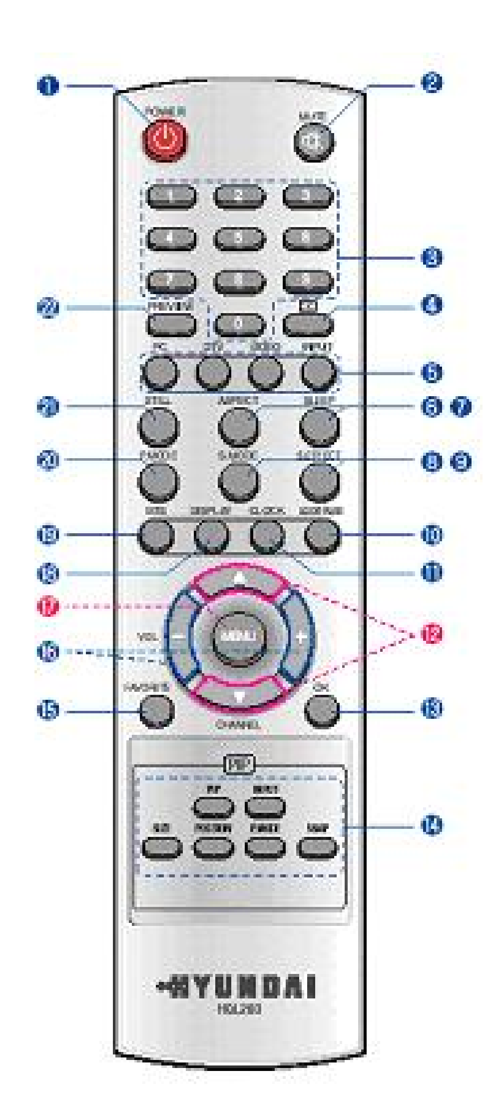
- H-POSITION : By this menu, a user can change the horizontal position of PC mode.

- V-POSITION : By this menu, a user can change the vertical position.

- Phase : By this menu, a user can adjust the phase of PC mode.

- Factory Preset : By this menu, a user can set factory default .

8.1.3 Remote Control



❶ POWER/STANDBY
Use this button to turn the TV set on or off.

❷ MUTE
Use this button to turn the sound off completely.

❸ NUMERIC KEYS
Use these buttons to select channels and input digit.

❹ CLOSED CAPTION
Use these buttons to select closed caption channel.

❺ EXTERNAL SOURCE INPUT SELECTION
Use this button to display the available video sources.
(TV, Video1/2/3, S-Video, DTV or DVD, PC)

❻ ASPECT RATIO
Use this button to change the picture size.

❼ SLEEP
Use this button to allow your TV to turn off automatically at designated time.

❽ SOUND MODE
Use this button to select Sound Mode.

❾ SOUND EFFECT
Use this button to select sound effect.

❿ ADD/ERASE
Use this button to store or erase channels.

⓫ CLOCK
Use this button to display clock.

⓬ CHANNEL SELECTION
- Use these buttons to select channels.
- Use these buttons to move each item of menu you want to choose.
- Use these buttons to quickly move to the other channel you want in TV mode while in different mode.

⓭ OK
Use this button to select each item of menu.

⓮ PIP FUNCTIONS
- PIP : Use this button for PIP On/Off.
- SIZE : Use this button to select Size.
- POSITION : Use this button to select Position.
- P.MODE : Use this button to select Picture Mode.
- SWAP : Use this button to swap between main picture and sub-picture.
- INPUT : Use this button to select the Input Source.

⓯ FAVORITE
Use this button to select the favorite channel.

⓰ SELECT/ADJUST
- Use this button to select or adjust each item of menu.
- Use this button to quickly adjust volume.

⓱ MENU
Use this button to bring up the OSD on the screen and jump back to the previous menu.

⓲ DISPLAY
Use this button to display resolution or various program information.

⓳ MTS
Use this button to display types of audio signals currently aired on TV. Or you can use this button to switch to other Sound Mode available.

⓴ PICTURE MODE
Use this button to select Picture Mode.

㉑ STILL
Use this button to freeze a picture.

㉒ PREVIEW
Use this button to return to the previous channel.

9. DISPLAY PANEL CHARACTERISTICS

9.1 General Descriptions

8. USER INTERFACE(PAL)

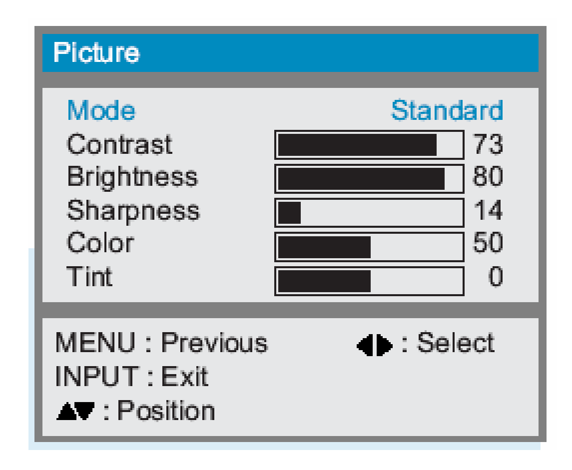
8.1 User Controls

The display device shall have following On-Screen Display controls.

5.1.1 User Control Panel

Name of button	Direct control (Hot Key)	In the OSD window
Source	Main source change	X
Menu	Display OSD window	Exit present selection or OSD
–	Turn the volume down	Move Left or Select
+	Turn the volume up	Move Right or Select
▼	Channel down	Move Down
▲	Channel up	Move Up
Power	Turn off/on the TV	Turn off/on the TV

8.1.2 Control Parameter(OSD)



- Mode : By this menu, a user can change the picture mode. There are three fixed mode (Standard, Sport, Natural, Mild) and one Custom mode. Only selecting Custom mode, a user can change each of parameters given below.

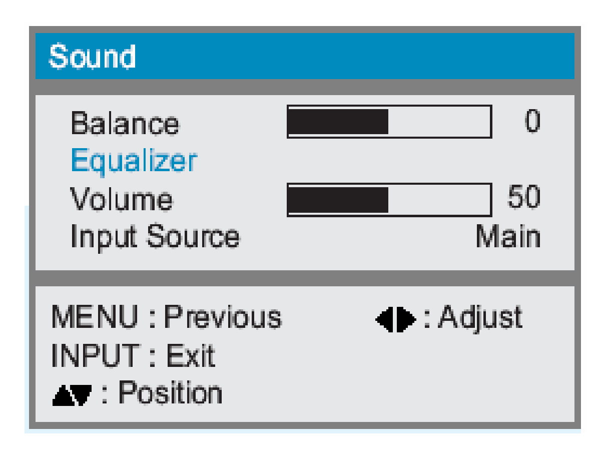
Contrast : By this menu, a user can control the contrast value of the video image.

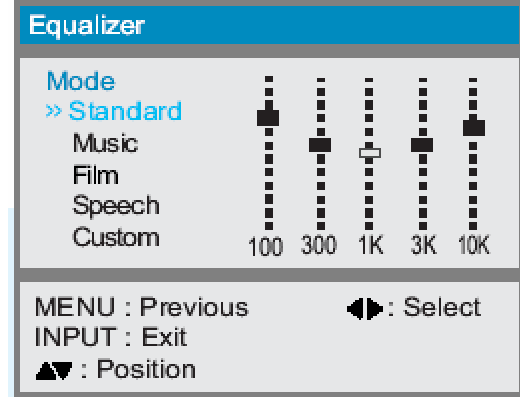
Brightness: By this menu, a user can control the brightness value of the video image.

Sharpness : By this menu, a user can control the sharpness of the video image.

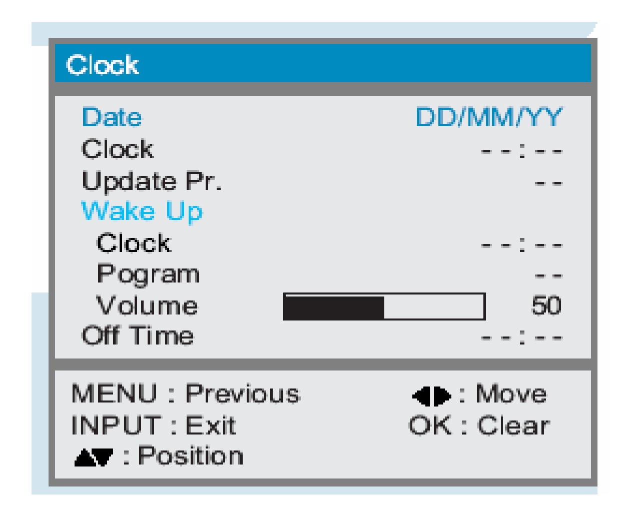
Color : By this menu, a user can control the saturation of the video image.

Tint : By this menu, a user can control the tint of the video image.

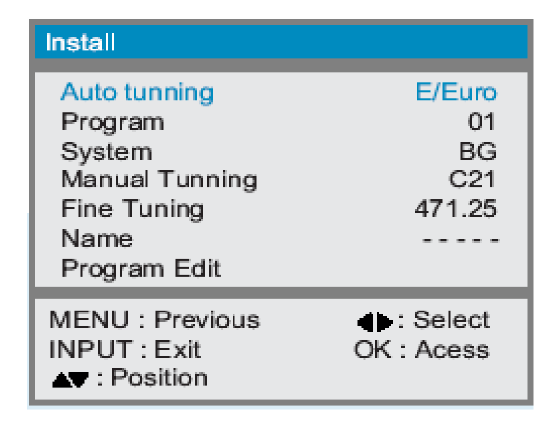


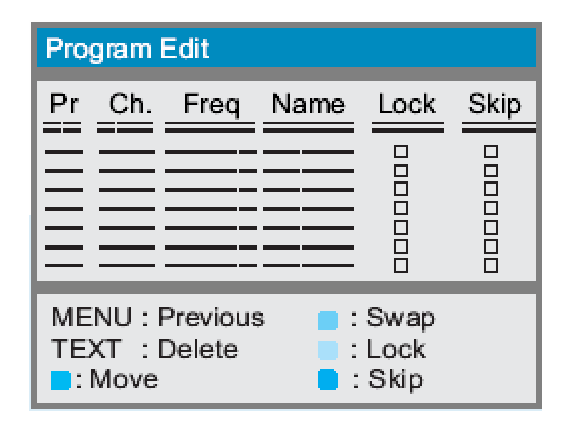


- Volume : By this menu, a user can control the audio volume.
- Balance : By this menu, a user can control the audio balance (left or right).
- Equlizer : By this menu, a user can change the audio frequency spectrum. There are four fixed mode (Standard, Music, Film, Speech) and one Custom mode. Only selecting Custom mode, a user can change each gain of frequency.
- Input Source : By this menu, a user can select the TV sound mode.(Main/Pip)



- Date : By this menu, a user can set current date (YY/MM/DD).
- Clock : By this menu, a user can set current time
- Update Pr. : By this menu, a user can update the time and date with the information carried by the broadcast signal.
- Wake Up
  - Clock : By this menu, a user can set turn on time
  - Program / Volume : By this menu, a user can set channel and volume when this set turn on.
- Off Time : By this menu, a user can set turn off time.

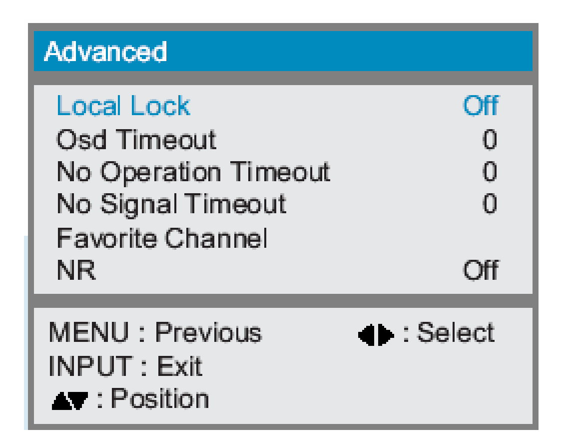




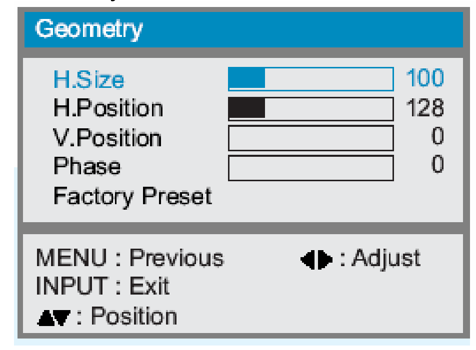
- Auto tunning : By this menu, you can scan channels available to you and their availability defends on your country.
- Program : By this menu, a user can choose channel that user want to edit. A user can select every channel in user's TV system (Not only in the TV's memory).
-System : By this menu, a user can choose Sound System.
- Fine Tunning : By this menu, a user can tune the TV channel finely.
- Name : By this menu, a user can assign name to channel.
- Program Edit : By this menu, a user can edit Program.(channel delete, move, swap, lock, skip)



- LANGUAGE : By this menu, a user can change OSD language.
 (English, French, German, Italian , Spanish)



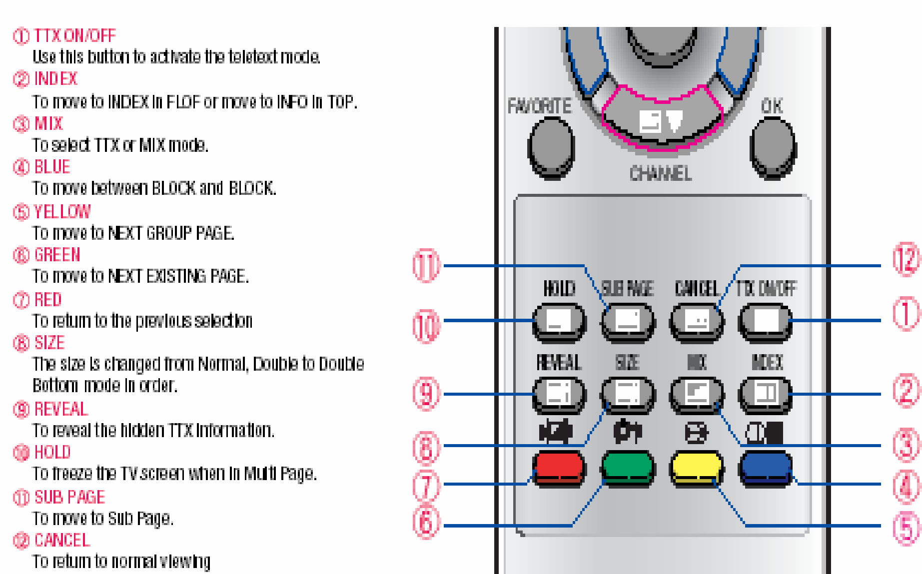
- Local Lock : By this menu, a user can select Local Lock type to lock key control. (off , once , always)
-. Osd Timeout : By this menu, a user can set Osd Timeout.
-. No Operation Timeout : Automatically turns the power off if there is no button pressed for a period of time after AUTO Wake-Up turns the power on
-. No Signal Timeout : Automatically turns the power off if there is no broadcast signal or button pressed for some time
- Favorite Channel : This function allows you to store up to five channels or input sources you use frequently.
- NR : By this menu, a user can reduce the video noise.(On/Off)



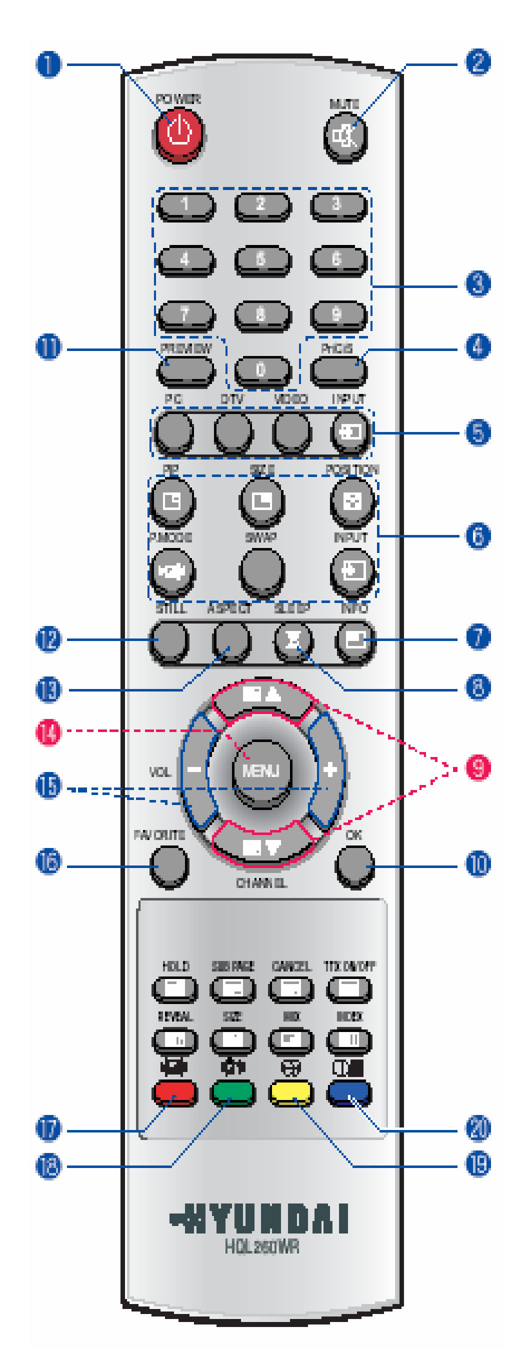
- H-SIZE : By this menu, a user can adjust the horizontal size of PC mode.
- H-POSITION : By this menu, a user can change the horizontal position of PC mode.
- V-POSITION : By this menu, a user can change the vertical position.
- Phase : By this menu, a user can adjust the phase of PC mode.
- Factory Preset : By this menu, a user can set factory default .

8.1.3 Teletext

Teletext & Fastext Function



8.1.4 Remote Control



❶ POWER/STANDBY
Use this button to turn the TV set on or off.

❷ MUTE
Use this button to turn the sound off completely.

❸ NUMERIC KEYS
- Use these buttons to select channels and input digit.
- Use these buttons to quickly move to the other channel you want in TV mode while in different mode.

❹ Pr/C/S(Program/Brodcast Channel/Cable Channel)
Use this button to select TV input source.

❺ EXTERNAL SOURCE INPUT SELECTION
Use this button to display the available video sources.
(TV, Video1/2, S-Video, DTV or DVD, PC, H Scart, F Scart)

❻ PIP FUNCTIONS
- PIP : Use this button for PIP On/Off.
- SIZE : Use this button to select Size.
- POSITION : Use this button to select Position.
- P.MODE : Use this button to select Picture Mode.
- SWAP : Use this button to swap between main picture and sub-picture.
- INPUT : Use this button to select the input Source.

❼ INFOMATION
Use this button to display resolution or various program information.

❽ SLEEP
Use this button to allow your TV to turn off automatically at designated time.

❾ CHANNEL SELECTION
- Use these buttons to select channels. You can also use these buttons when changing pages in TTX mode.
- Use these buttons to move each item of menu you want to choose.
- Use these buttons to jump back to TV mode from other mode.

❿ OK
- Use this button to select each item of menu.
- Use this button to display clock.

⓫ PREVIEW
Use this button to return to the previous channel.

⓬ STILL
Use this button to freeze a picture.

⓭ ASPECT RATIO
Use this button to change the picture size.

⓮ MENU
Use this button to bring up the OSD on the screen and jump back to the previous menu.

⓯ SELECT/ADJUST
- Use this button to select or adjust each item of menu.
- Use this button to quickly adjust volume.

⓰ FAVORITE
Use this button to select the favorite channel.

⓱ PICTURE MODE
Use this button to select Picture Mode.

⓲ SOUND MODE
Use this button to select Sound Mode.

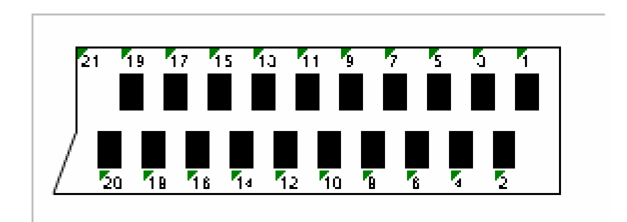
⓳ SRS WOW
Use this button to select SRS WOW.

⓴ SOUND
Use this button to display types of audio signals currently aired on TV. Or you can use this button to switch to other Sound Mode available.

9. DISPLAY PANEL CHARACTERISTICS

9.1 General Descriptions

The Scart connector is used for combined audio and video connections.
The connector is also known as Pertitle connector or Euroconnector.
A Formal description is given in the CENELEC EN50049-1:1989 standard or in the IEC933-1 standard .
Sometimes one can choose the configuration by changing a software setting.
Two ststus signals define(partly)which video signals are active. A Video device can use these status signals to automatically switch between internal or external audio/video signals.



< Full Scart >

Out Put connector		Input connector	
1	Audio right out	2	Audio right in
3	Audio left out	6	Audio left in
4	Audio return	4	Audio return
7	Blue out	7	Blue in
5	Blue return	5	Blue return
11	Green out	11	Green in
9	Green return	9	Green return
15	Red out	15	Red in
13	Red return	13	Red return
16	RGB status out	16	RGB status in
14	RGB status return	14	RGB status return
19	Sync(Composit)out	20	Sync (Composit) in
17	Sync return	18	Sync return
21	Shield	21	Shield

< Half Scart>

Output connector		Input connector	
1	Audio right out	2	Audio right in
3	Audio left out	6	Audio left in
4	Audio return	4	Audio return
8	Video status out	8	Video status in
19	Composit out	20	Composit in
17	Composit return	18	Composit return
21	Shield	21	Shield

This display unit shall employ a TFT LCD module complying with the following specifications

Items	Description
Active area	26.0 inch diagonal (15:9) 566.4(H) x 337.84(V) mm 32.0 inch diagonal (16:9) 697.6(H) x 392.2(V) mm
Drive System	A-Si TFT active matrix
Display Color	16.7M colors
Number of pixels	1280 X 768
Pixel arrangement	RGB vertical stripe
Pixel pitch	26.0 inch : 0.4425(H) x 0.4425(V) mm, 32.0 inch : 0.51075(H) x 0.51075(W)
Module Size(HXVXDmm)	26.0 inch : 627 x 389 x 49, 32.0 inch : 760 x 450 x 50
Weight	26.0 inch : 16kg, 32.0 inch : 18kg
Contrast ratio	500 : 1 (typ)
Viewing angle	Horizontal : +/- 85 ˚ (typ) Vertical : +/- 85 ˚ (typ)
Response time	Rising 15ms / Falling 8ms (typ)
Luminance	450cd/㎡ (typ)
Signal system	LVDS 1 Ch
Supply voltage	5.0V (typ)
Back Light	Direct illumination type : 16 CCFT

9.2 PC connector cable

The Pin assignments shall be listed as below.

PIN No.	Assignment
1	Red
2	Green
3	Blue
4	GND
5	GND
6	Red GND
7	Green GND
8	Blue GND
9	BLANK
10	SYNC GND
11	GND
12	SDA
13	H-SYNC
14	V-SYNC
15	SCL

9.3 Scart Connector

Critical Parts Specification

TEA6415C

Main Features

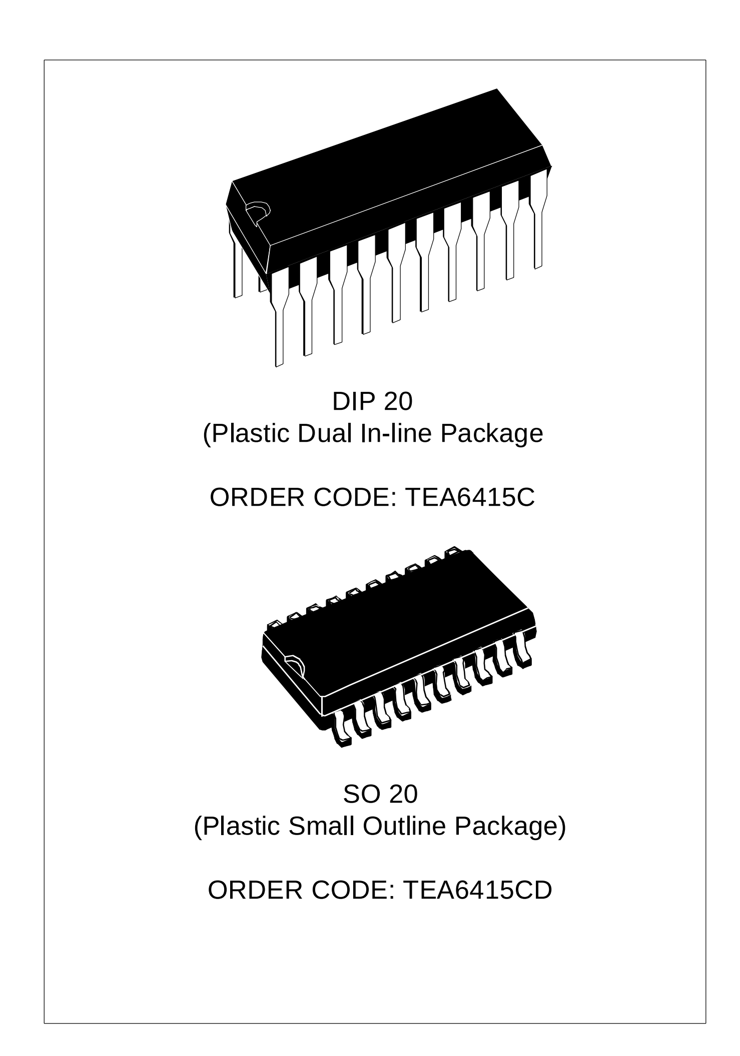
- **20 MHz Bandwidth**
- **Cascadable with another TEA6415C (Internal Address can be changed by Pin 7 Voltage)**
- **8 Inputs (CVBS, RGB, Chroma, ...)**
- **6 Outputs**
- **Possibility of Chroma Signal for each Input by switching off the Clamp with an external Resistor Bridge**
- **Bus Controlled**
- **6.5 dB Gain between any Input and Output**
- **-55 dB Crosstalk at 5 MHz**
- **Full ESD Protection**

Description

The main function of the TEA6415C is to switch 8 video input sources on the 6 outputs.

Each output can be switched to only one of the inputs, whereas any single input may be connected to several outputs.

All switching possibilities are controlled through the I^2C bus.



DIP 20
(Plastic Dual In-line Package

ORDER CODE: TEA6415C

SO 20
(Plastic Small Outline Package)

ORDER CODE: TEA6415CD

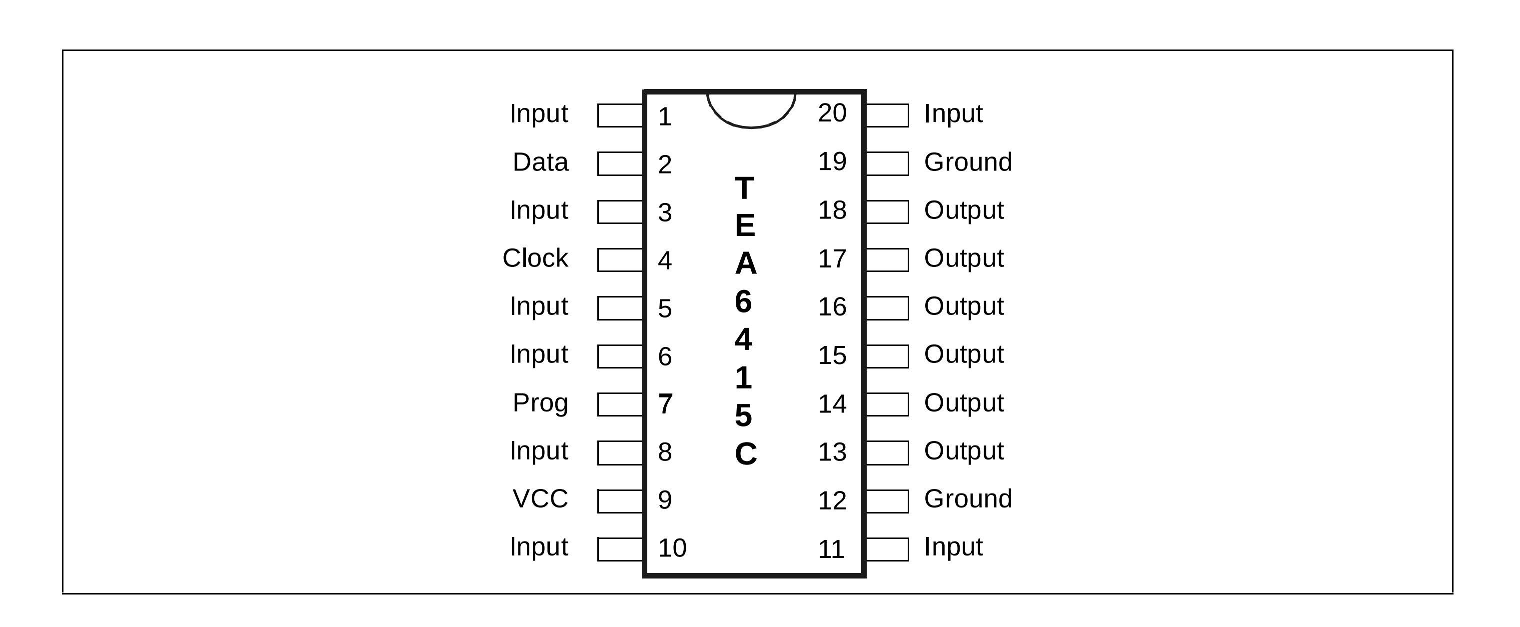
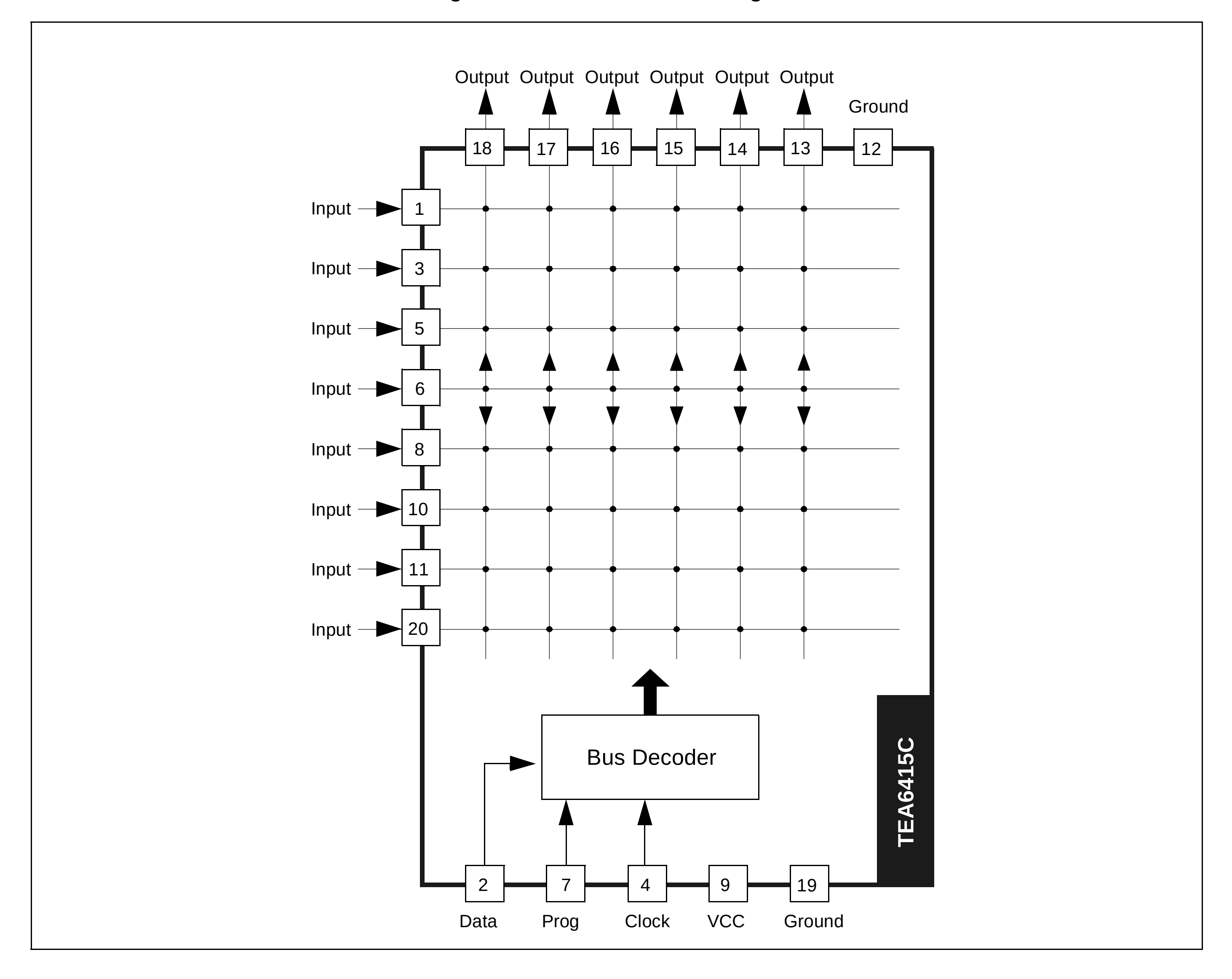


Figure 1: TEA6415C Block Diagram



The main function of the TEA6415C is to switch 8 video input sources on the 6 outputs.

Each output can be switched to only one of the inputs, whereas any single input may be connected to several outputs. The lowest level of each signal is aligned on each input (bottom of sync pulse for CVBS or Black Level for RGB signals).

The nominal gain between any input and output is 6.5 dB. For Chroma signals, the alignment is switched off by forcing, with an external 5 V_{DC} resistor bridge on the input. Each input can be used as a normal input or as a Chroma input (with external resistor bridge). All the switching possibilities are changed through the I²C bus.

Driving a 75 Ω load requires an external transistor.

The switches configuration is defined by words of 16 bits: one word of 16 bits for each output channel.

So, 6 words of 16 bits are necessary to determine the starting configuration upon power-on (power supply: 0 to 10V). But a new configuration needs only the words of the changed output channels.

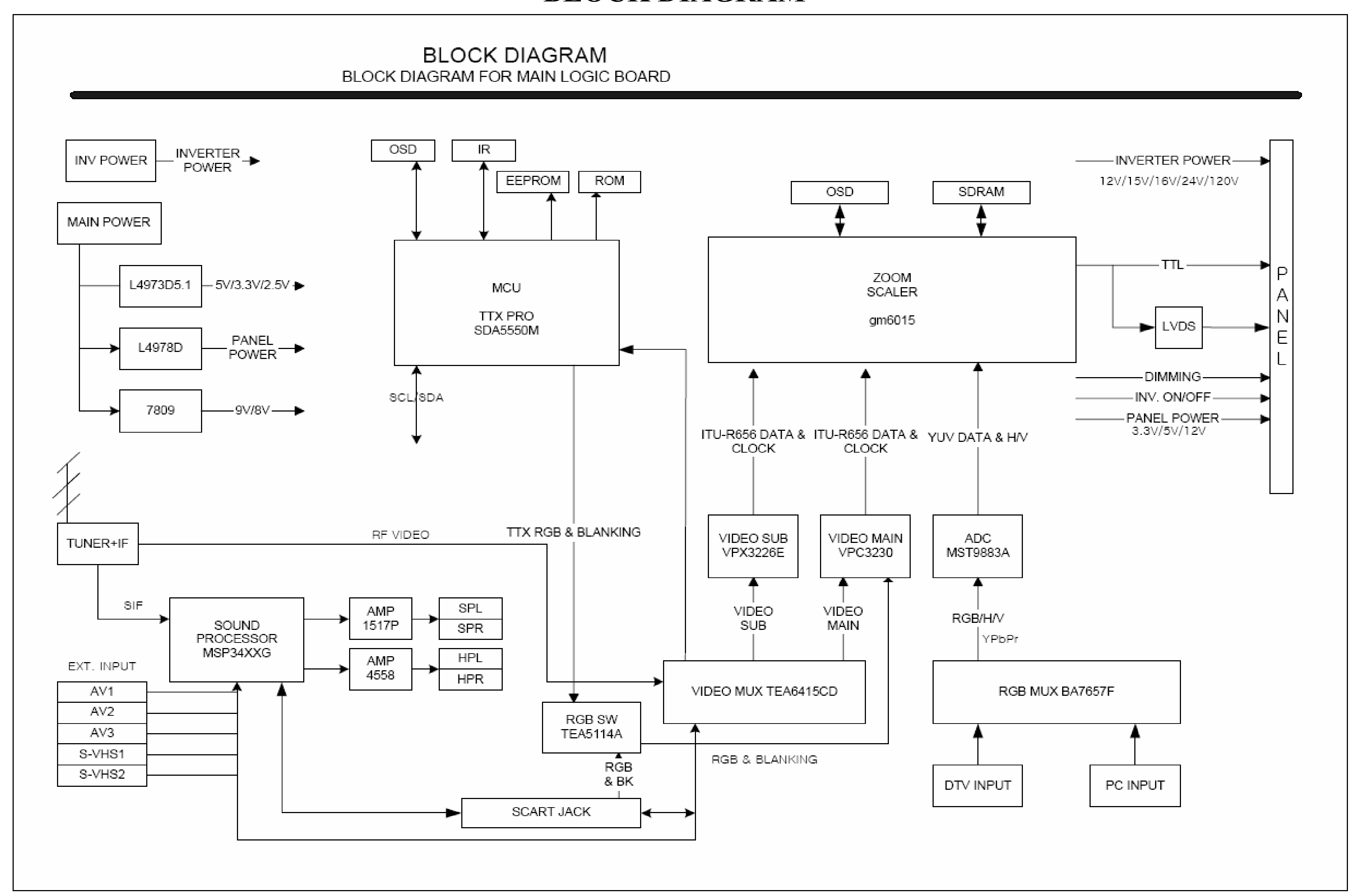
HQL260WR 320WR ART LI T(T C)

NUM.	LOCATION	PART NUMBER	DESCRIPTION	REMARK
1		E4204532100	ACCESSARY ASSY,LT260W NTSC	
2		E42077006010	CORD AC,SVT 120V WALL N-SHIELD	
3		3010700922	REMOTE CONTROL ASSY,LT260W(NTS	
4		3610200111	BATTERY,AAA 1.5V MERCURY&CADMI	
5		3725005309	CONN-A,NTSC CABLE 3.0MT	
6		6301193600	INNER BOX,15 KIOSK	
7		3010700909	PWR B/D ASSY,LT260W	
8		301070091101	TUNER B/D ASSY,LT260W NTSC	
9		3010500135	TUNER,TCLN9081DA27D NTSC	
10		3010700913	SUB VIDEO INPUT B/D ASSY,LT260	
11		3010700918	OSD B/D ASSY,LT260W	
12		301070091901	MAIN B/D ASSY,LT260W(NTSC)	
13		3205001428	IC-U,SRS WOW MSP3450GC12 PMQFP	
14		3330500278	LCD MODULE,LTA260W1-L03 SDI LT	
15		3550100120	SPEAKER ASS'Y, LT260W	
16		3725005326	CONN-A,LVDS CABLE 30P 140MM LT	
17		3725005327	CONN-A,MAIN to PNL 15P-10P 170	
18		3725005328	CONN-A,MAIN to PNL 15P-10P 190	
19		3725005330	CONN-A,PWR to MAIN 9P 150MM LT	
20		3725005331	CONN-A,11P 480mm LT260W	

HQL260WR 320WR ART LI T(AL)

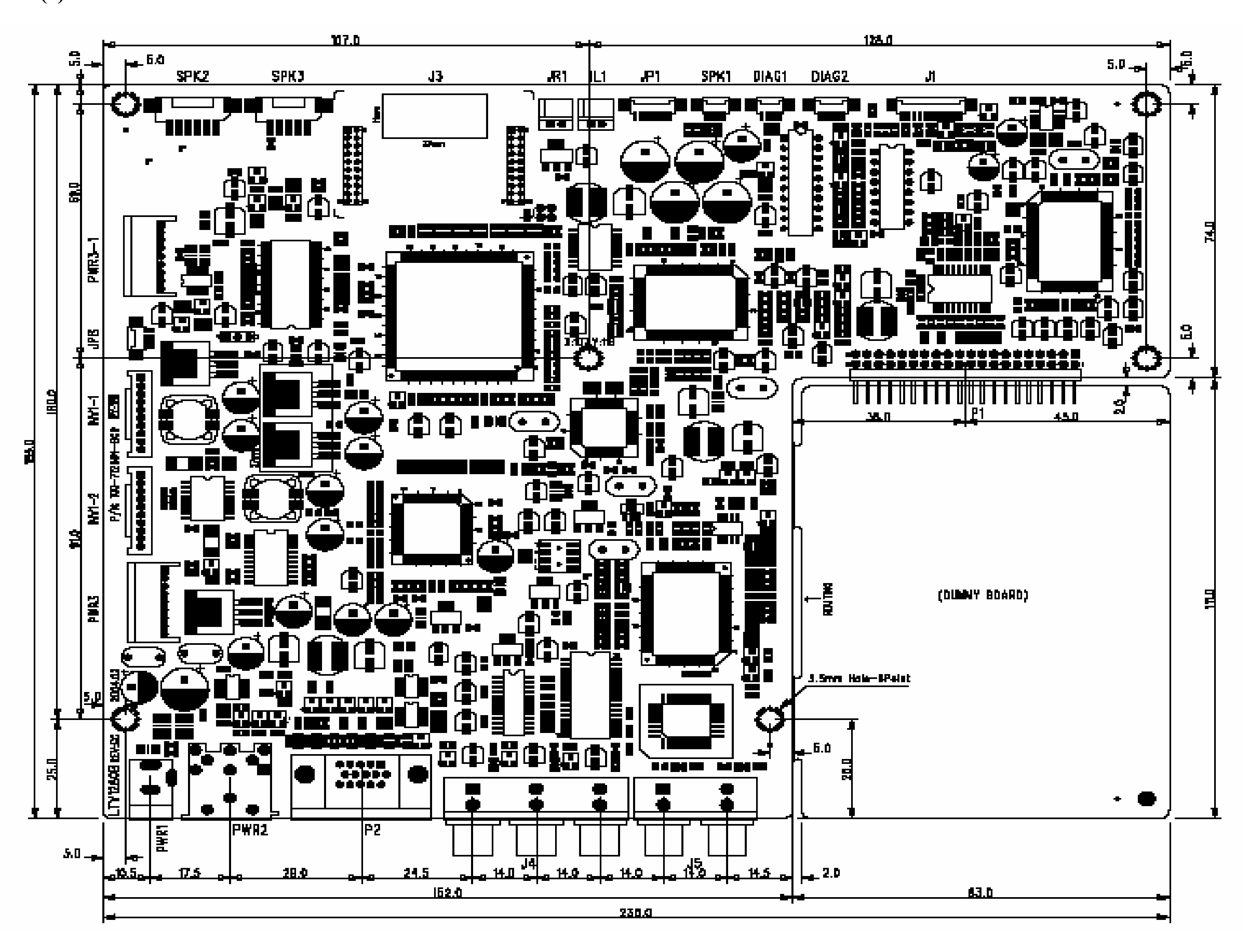
NUM.	LOCATION	PART NUMBER	DESCRIPTION	REMARK
1		E4204532200	ACCESSARY ASSY,LT260W PAL	
2		E42077080050	CORD AC,220V WALL BK 1.83M	
3		3010700921	REMOTE CONTROL ASSY,LT260W(PAL	
4		3610200111	BATTERY,AAA 1.5V MERCURY&CADMI	
5		3725005311	CONN-A,PAL CABLE 3.0MT	
6		6301193600	INNER BOX,15 KIOSK	
7		3010700909	PWR B/D ASSY,LT260W	
8		301070091201	TUNER B/D ASSY,LT260W PAL	
9		3010500128	TUNER,TCPQ9091PD27D(S) PAL	
10		3200001593	IC-LIN,CXA2069Q QFP	
11		3010700913	SUB VIDEO INPUT B/D ASSY,LT260	
12		3010700918	OSD B/D ASSY,LT260W	
13		301070092001	MAIN B/D ASSY,LT260W(PAL)	
14		3203000920	IC-MEMO,K6X4008T1F-VB70 32-TSO	
15		3205001428	IC-U,SRS WOW MSP3450GC12 PMQFP	
16		3330500278	LCD MODULE,LTA260W1-L03 SDI LT	
17		3550100120	SPEAKER ASS'Y, LT260W	
18		3725005326	CONN-A,LVDS CABLE 30P 140MM LT	
19		3725005327	CONN-A,MAIN to PNL 15P-10P 170	
20		3725005328	CONN-A,MAIN to PNL 15P-10P 190	
21		3725005330	CONN-A,PWR to MAIN 9P 150MM LT	
22		3725005332	CONN-A,11P 120mm LT260W	
23		3725005333	CONN-A,11P 590mm LT260W	

- BLOCK DIAGRAM -

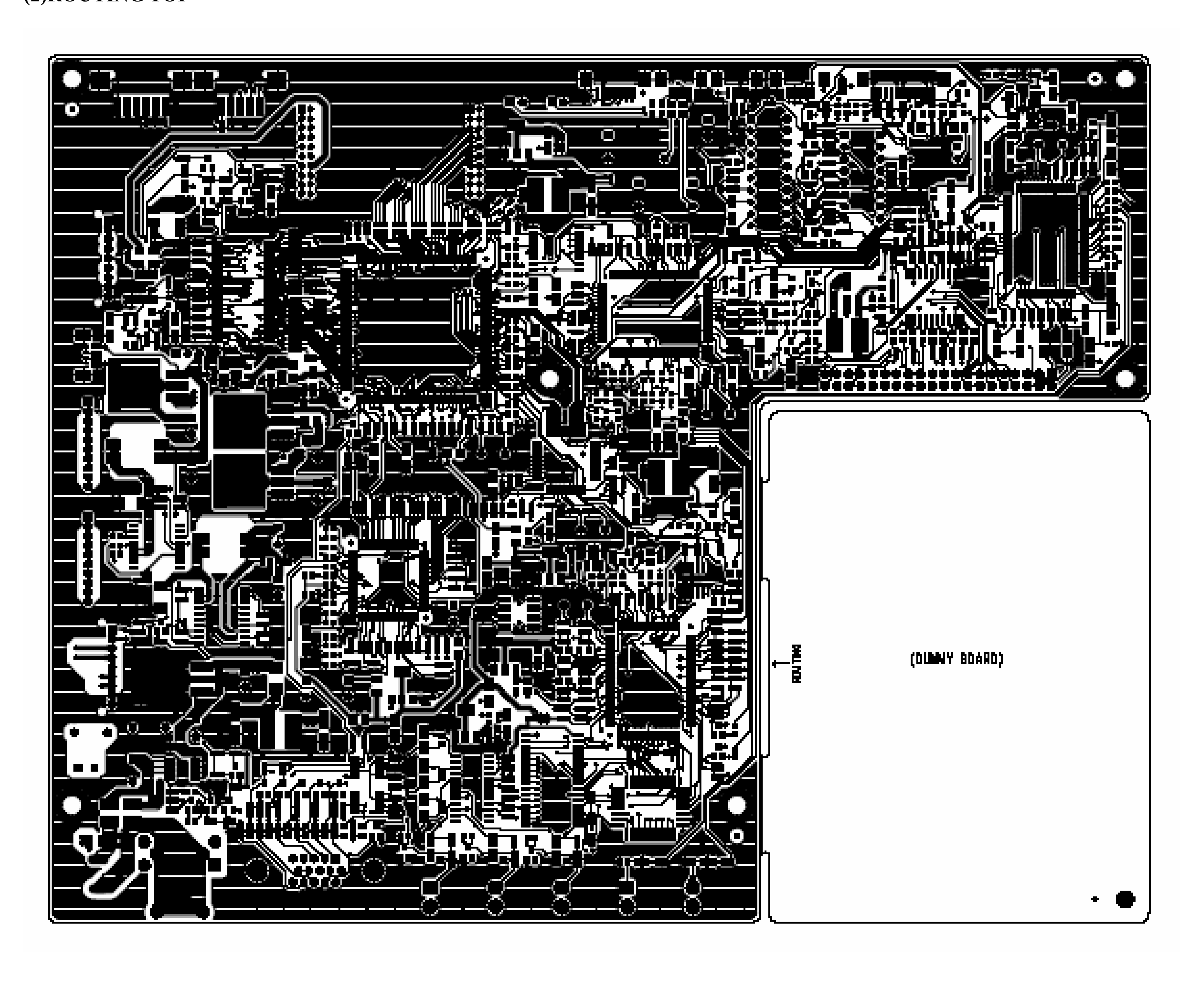


- Main PCB Pattern -

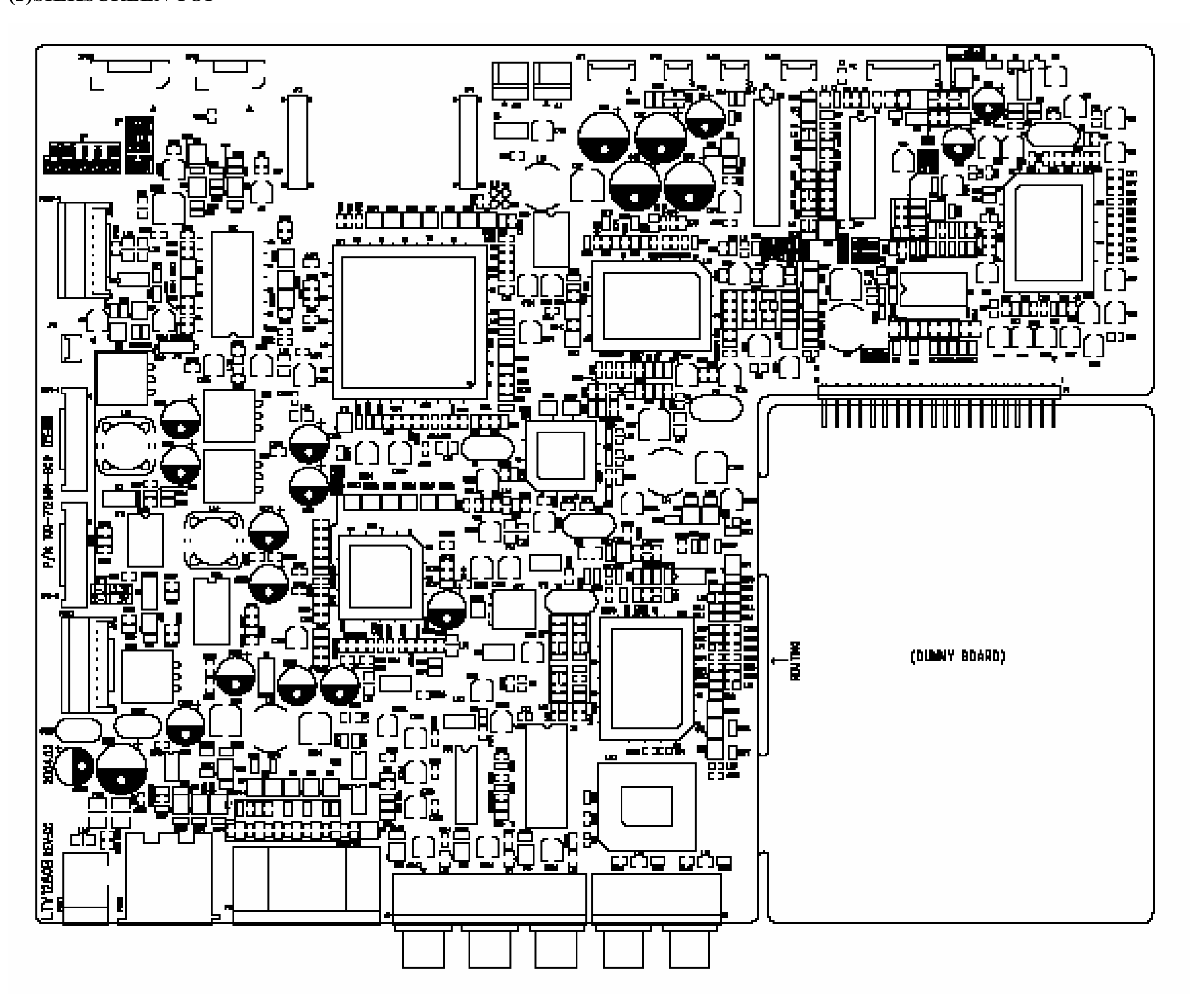
(1)ASSEMBLY DRAWING TOP



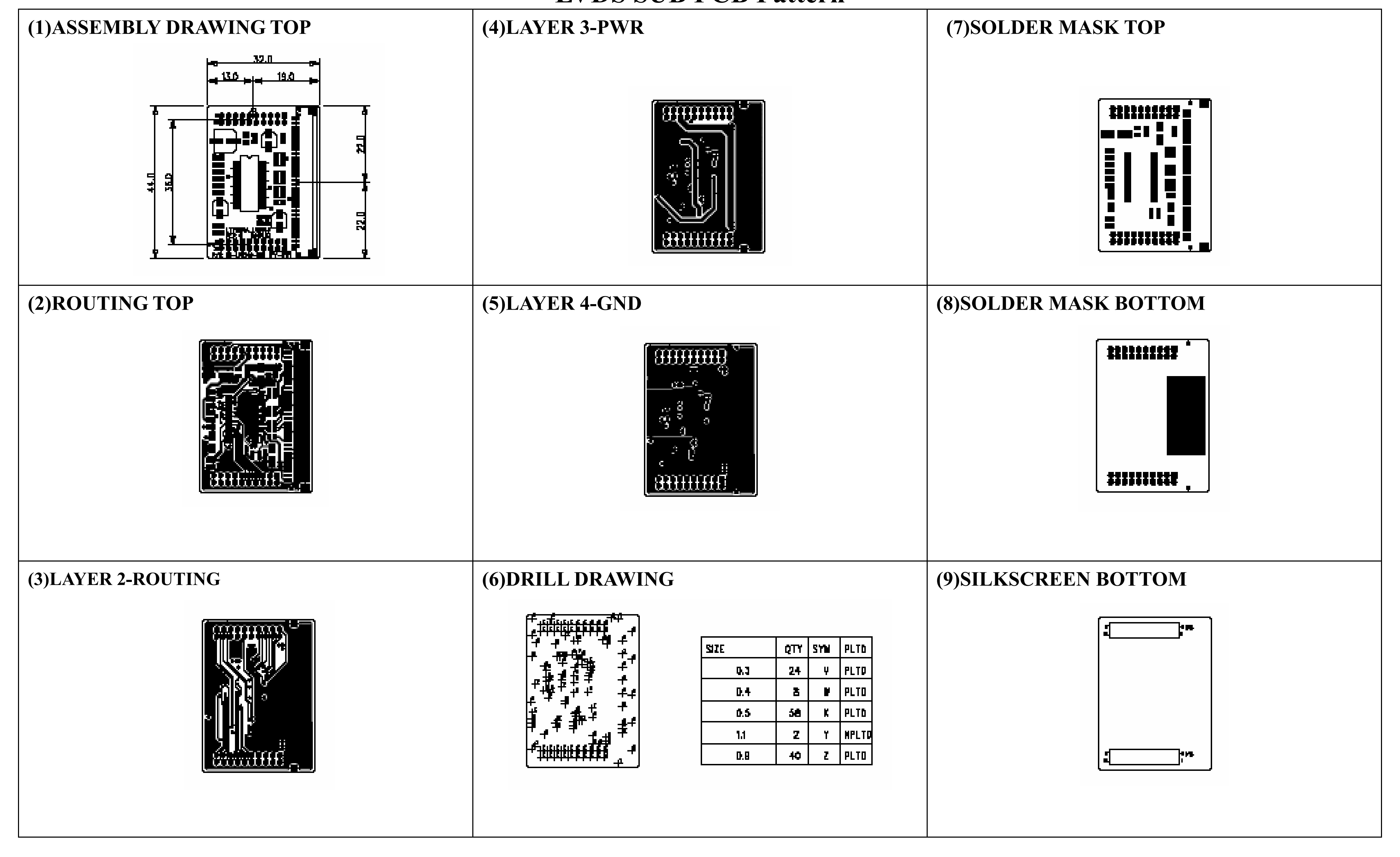
(2)ROUTING TOP



(3)SILKSCREEN TOP



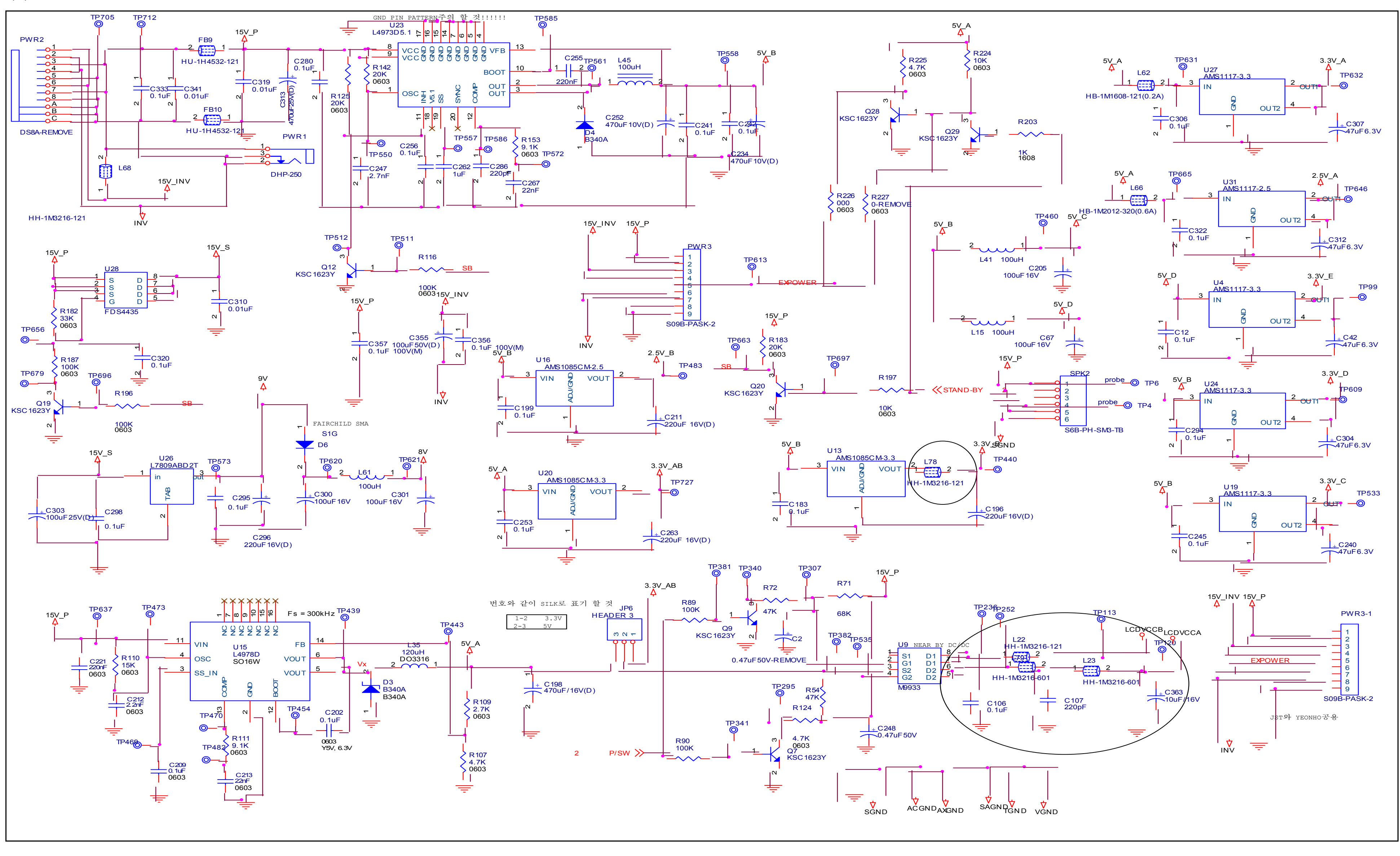
- LVDS SUB PCB Pattern -



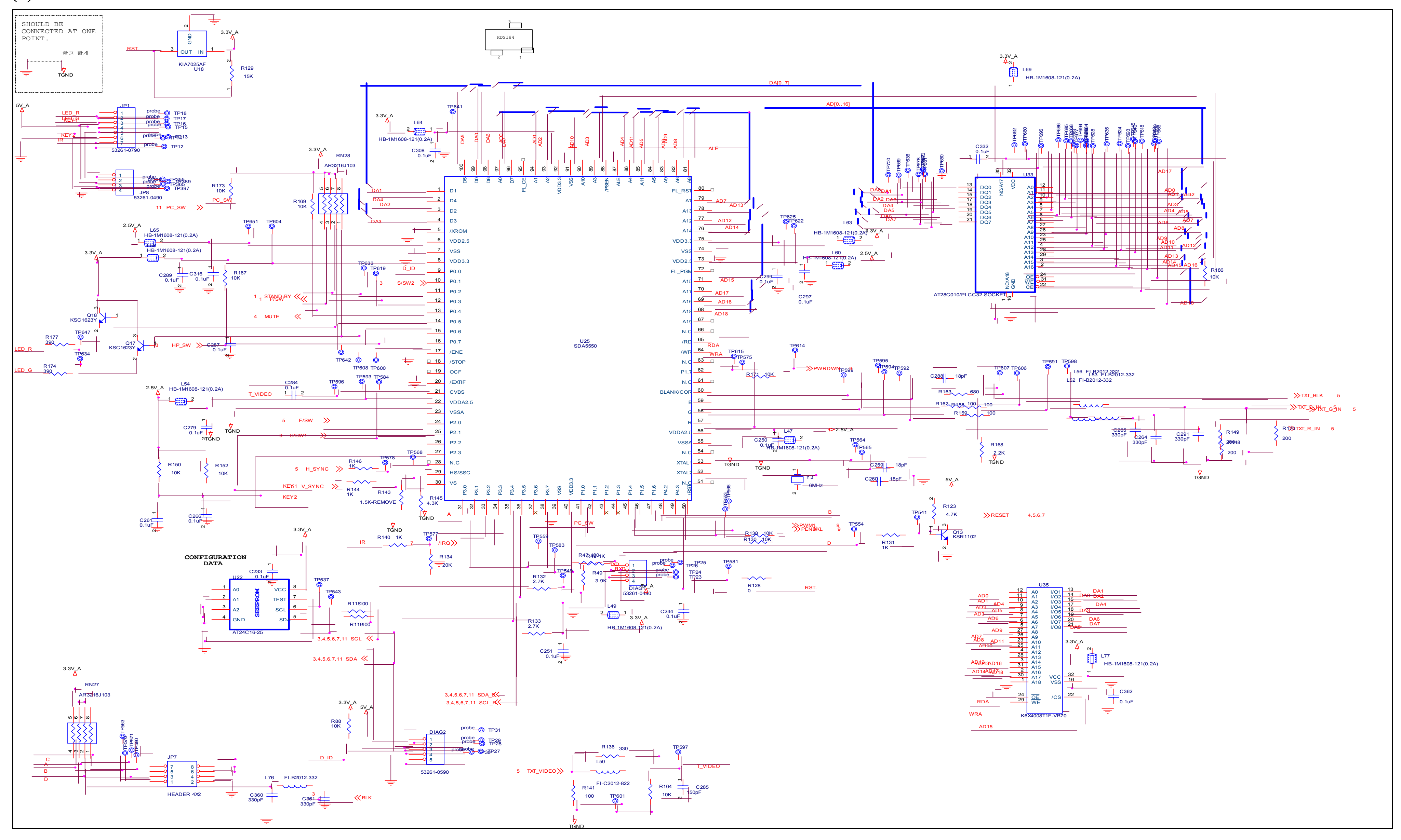
SIZE	QTY	SYM	PLTD
0.3	24	V	PLTD
0.4	8	W	PLTD
0.5	58	K	PLTD
1.1	2	Y	NPLTD
0.8	40	Z	PLTD

- Main Circuit Diagram -

(1)POWER

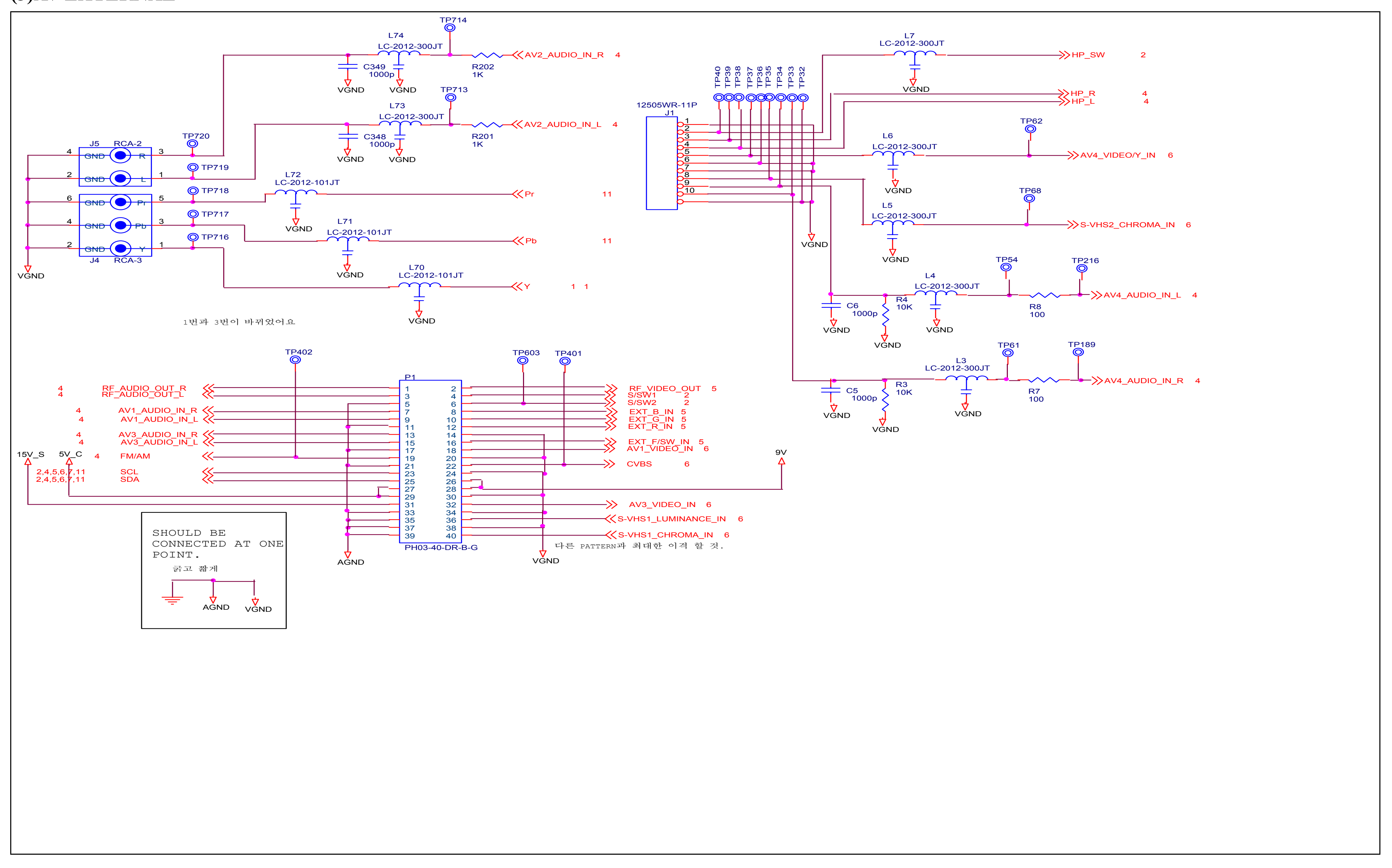


(2)MCU

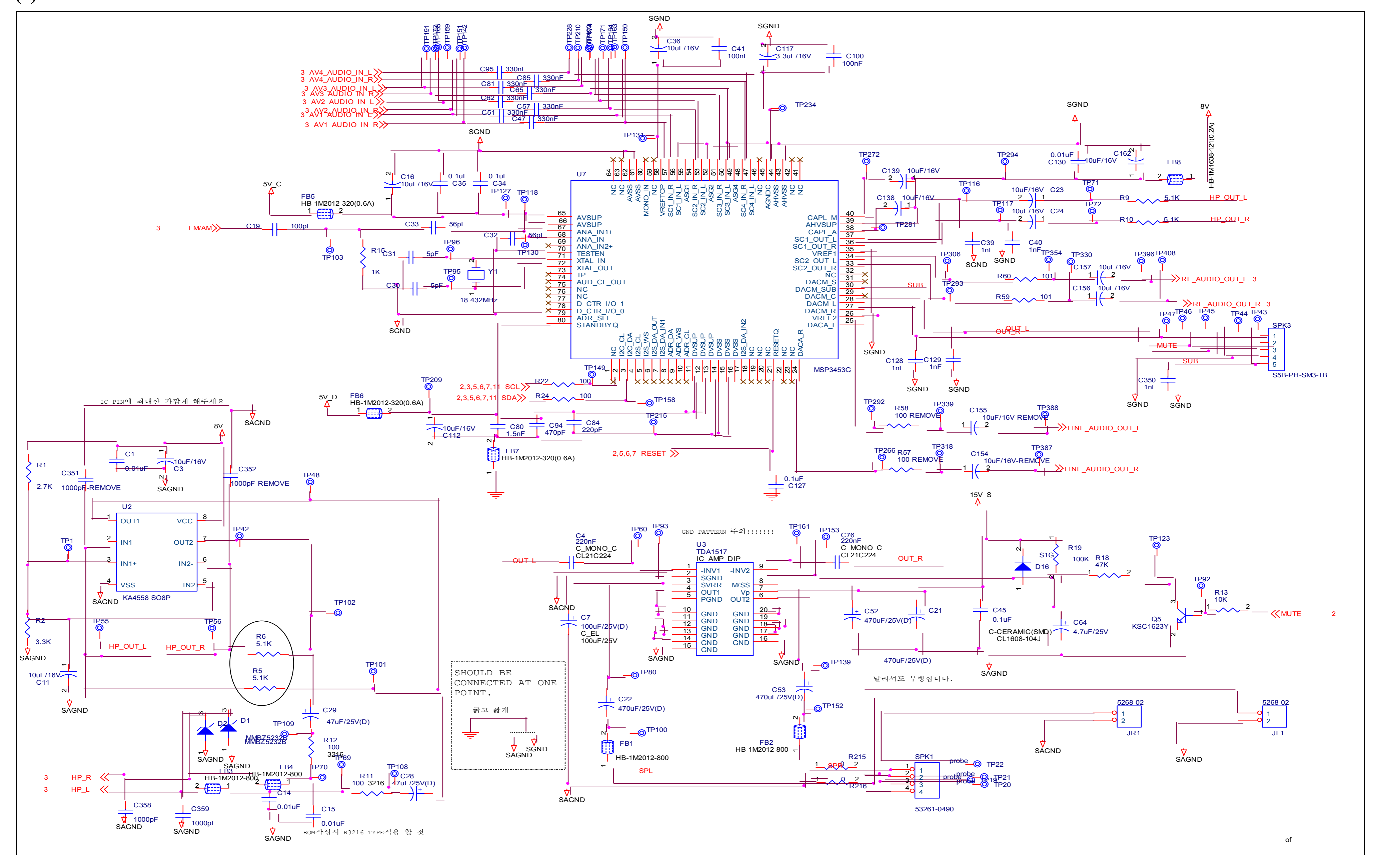


SHOULD BE CONNECTED AT ONE POINT.
TGND
KIA7025AF
U18
R129
15K
RST
DA[0..7]
AD[0..16]
U25
SDA5550
U33
AT28C010/PLCC32 SOCKET
U35
K6X4008T1F-VB70
CONFIGURATION DATA
U22
A124C16-25
SEEPROM
HEADER 4X2
RN27
AR3216J103
RN28
AR3216J103
53261-0790
53261-0490
53261-0590
DIAG1
DIAG2
Q17
KSC1623Y
Q18
KSC1623Y
Q13
KSR1102
Y3
6MHz
HB-1M1608-121(0.2A)
FI-B2012-332
FI-C2012-822
3.3V_A
2.5V_A
5V_A
LED_R
LED_G
PC_SW
HP_SW
STAND_BY
MUTE
S/SW2
F/SW
S/SW1
H_SYNC
V_SYNC
KEY1
KEY2
T_VIDEO
D_ID
/IRQ
PWRDWN
RESET
TXT_BLK
TXT_G_IN
TXT_R_IN
TXT_VIDEO
BLK
3,4,5,6,7,11 SCL
3,4,5,6,7,11 SDA
3,4,5,6,7,11 SDA_B
3,4,5,6,7,11 SCL_B
RDA
WRA
ALE

(3)AV EXTERNAL

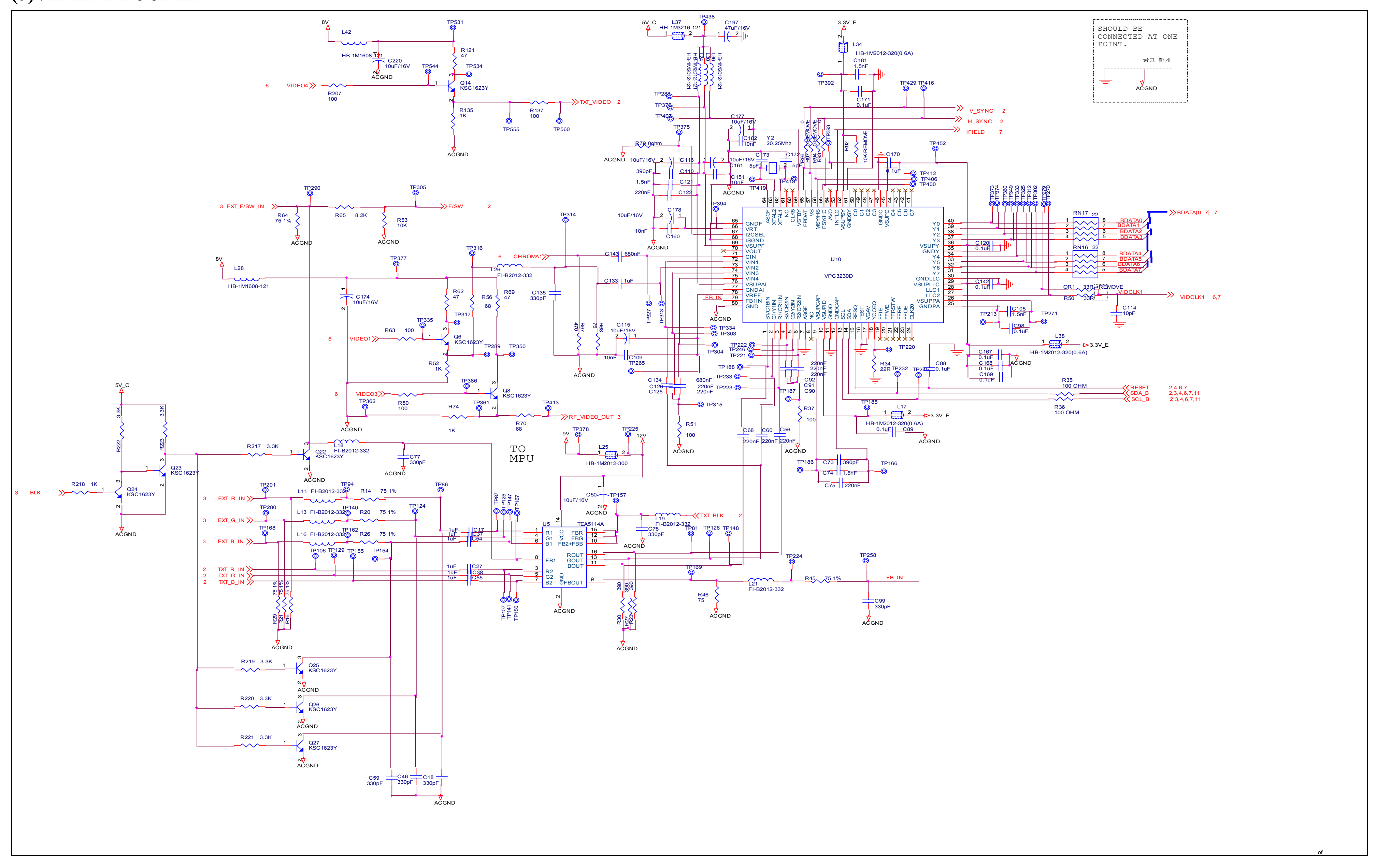


(4)SOUND

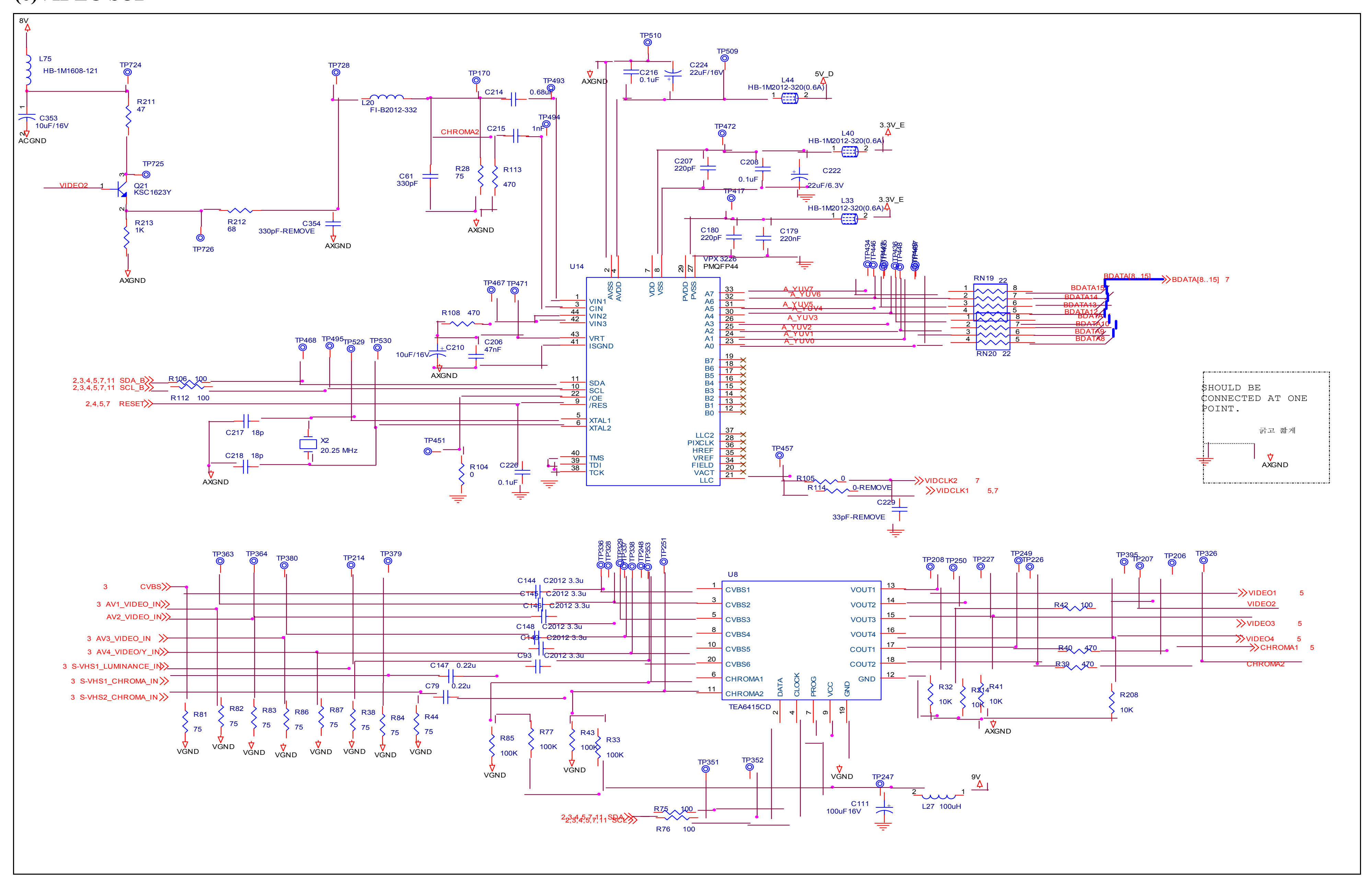


SGND
C36 10uF/16V
C41 100nF
C117 3.3uF/16V
C100 100nF
TP234
3 AV4_AUDIO_IN_L
3 AV4_AUDIO_IN_R
3 AV3_AUDIO_IN_L
3 AV3_AUDIO_IN_R
3 AV2_AUDIO_IN_L
3 AV2_AUDIO_IN_R
3 AV1_AUDIO_IN_L
3 AV1_AUDIO_IN_R
C95 330nF
C85 330nF
C81 330nF
C65 330nF
C62 330nF
C57 330nF
C51 330nF
C47 330nF
U7
MSP3453G
5V_C
FB5 HB-1M2012-320(0.6A)
C16 10uF/16V
C35 0.1uF
C34 0.1uF
3 FM/AM
C19 100pF
C33 56pF
C32 66pF
R15 1K
C31 5pF
C30 5pF
Y1 18.432MHz
TP103
TP96
TP95
TP127
TP118
TP130
TP131
AVSUP
ANA_IN1+
ANA_IN-
ANA_IN2+
TESTEN
XTAL_IN
XTAL_OUT
TP
AUD_CL_OUT
NC
D_CTR_I/O_1
D_CTR_I/O_0
ADR_SEL
STANDBYQ
CAPL_M
AHVSUP
CAPL_A
SC1_OUT_L
SC1_OUT_R
VREF1
SC2_OUT_L
SC2_OUT_R
DACM_S
DACM_SUB
DACM_C
DACM_L
DACM_R
VREF2
DACA_L
SGND
8V
C139 10uF/16V
C138 10uF/16V
C130 0.01uF
C162 10uF/16V
FB8 HB-1M1608-121(0.2A)
C23 10uF/16V
C24 10uF/16V
R9 5.1K
R10 5.1K
HP_OUT_L
HP_OUT_R
TP272
TP294
TP116
TP117
TP71
TP72
TP281
C39 1nF
C40 1nF
R60 101
R59 101
C157 10uF/16V
C156 10uF/16V
RF_AUDIO_OUT_L 3
RF_AUDIO_OUT_R 3
SUB
OUT_L
OUT_R
MUTE
SPK3 S5B-PH-SM3-TB
C128 1nF
C129 1nF
C350 1nF
2,3,5,6,7,11 SCL
2,3,5,6,7,11 SDA
R22 100
R24 100
TP209
TP149
TP158
TP215
5V_D
FB6 HB-1M2012-320(0.6A)
C112 10uF/16V
C80 1.5nF
C94 470pF
C84 220pF
FB7 HB-1M2012-320(0.6A)
2,5,6,7 RESET
C127 0.1uF
R58 100-REMOVE
C155 10uF/16V-REMOVE
LINE_AUDIO_OUT_L
R57 100-REMOVE
C154 10uF/16V-REMOVE
LINE_AUDIO_OUT_R
IC PIN에 최대한 가깝게 해주세요
R1 2.7K
C351 1000pF-REMOVE
C1 0.01uF
C3 10uF/16V
C352 1000pF-REMOVE
U2 KA4558 SO8P
OUT1 VCC IN1- OUT2 IN1+ IN2- VSS IN2
R2 3.3K
C11 10uF/16V
R6 5.1K
R5 5.1K
HP_OUT_L
HP_OUT_R
TP102
TP101
C29 47uF/25V(D)
D2 D1 MMBZ5232B
R12 100 3216
R11 100 3216
C28 47uF/25V(D)
3 HP_R
3 HP_L
FB3 HB-1M2012-800
FB4 HB-1M2012-800
C358 1000pF
C359 1000pF
C14 0.01uF
C15 0.01uF
BOM작성시 R3216 TYPE적용 할 것
SHOULD BE CONNECTED AT ONE POINT.
굵고 짧게
GND PATTERN 주의!!!!!!!
C4 220nF C_MONO_C CL21C224
C76 220nF C_MONO_C CL21C224
U3 TDA1517 IC_AMP_DIP
-INV1 -INV2 SGND SVRR M/SS OUT1 Vp PGND OUT2 GND
C7 100uF/25V(D) C_EL 100uF/25V
C22 470uF/25V(D)
C53 470uF/25V(D)
C52 470uF/25V(D)
C21 470uF/25V(D)
C45 0.1uF C-CERAMIC(SMD) CL1608-104J
C64 4.7uF/25V
15V_S
R19 100K
R18 47K
D16 S1G
R13 10K
Q5 KSC1623Y
MUTE 2
FB1 HB-1M2012-800
FB2 HB-1M2012-800
SPL
R215
R216
SPK1 53261-0490
probe
TP22 TP21 TP20
5268-02 JR1
5268-02 JL1
날리셔도 무방합니다.

(5)VIDER DECODER

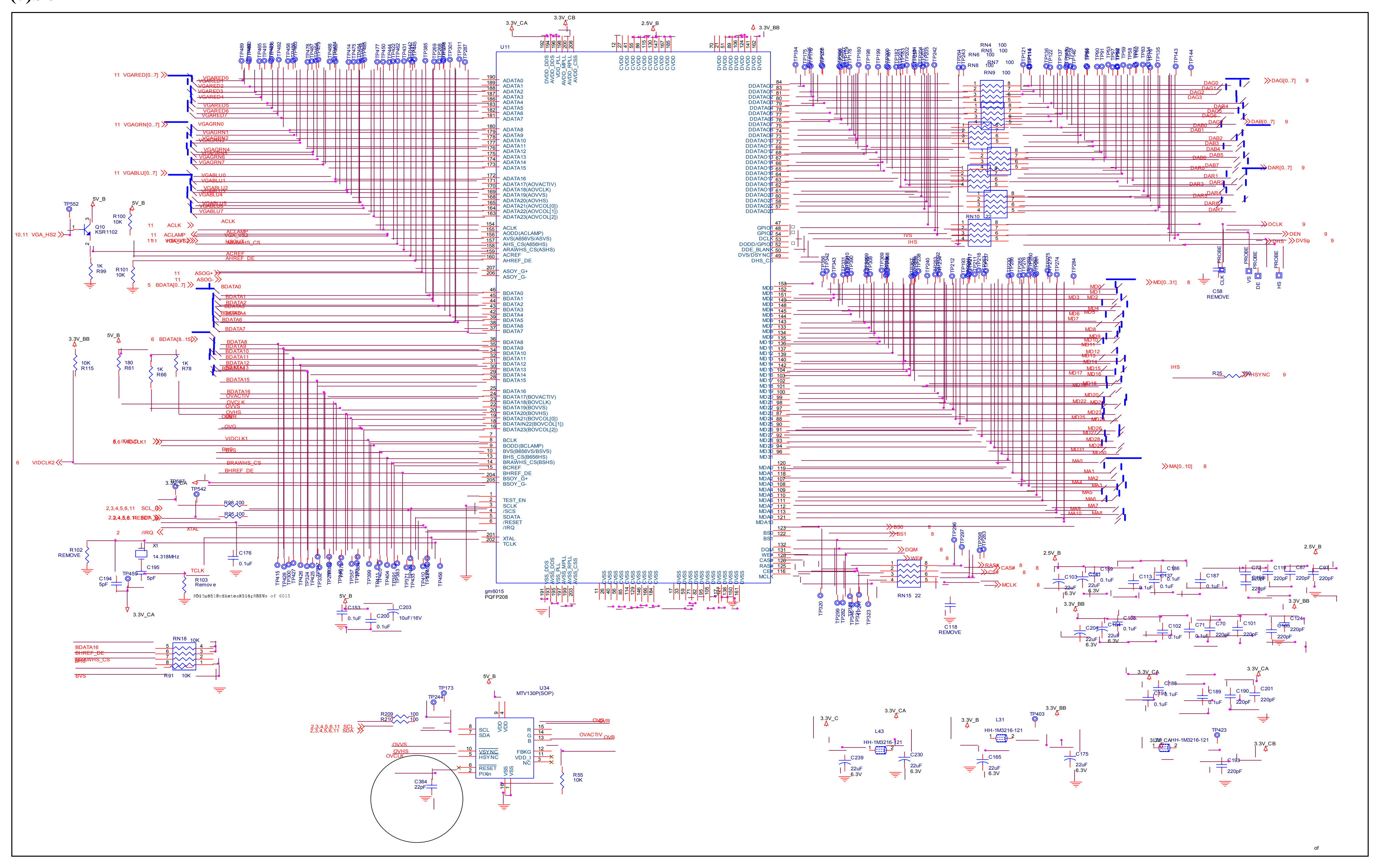


(6)VIDEO SUB

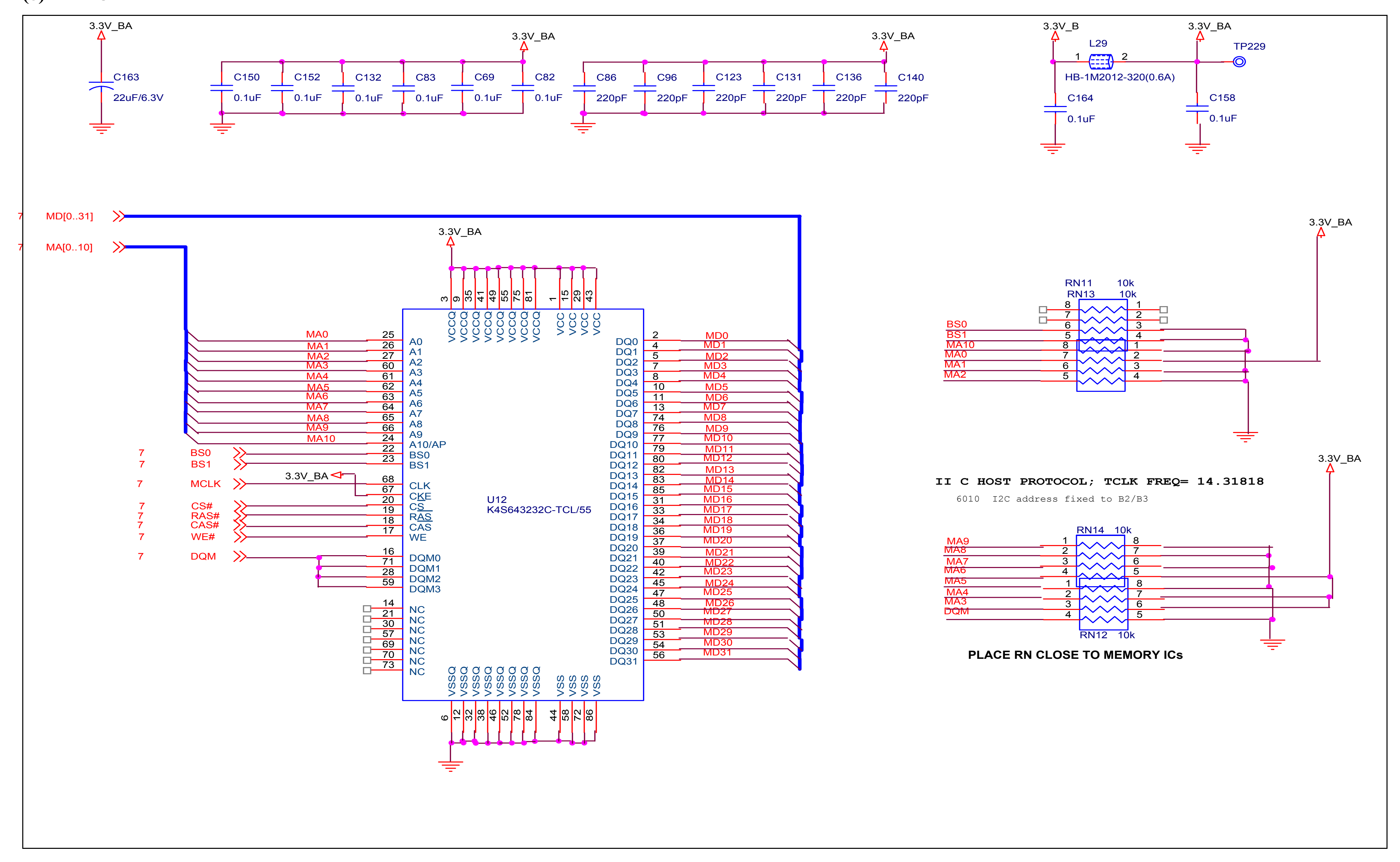


U14
VPX3226
PMQFP44
U8
TEA6415CD
VIN1
CIN
VIN2
VIN3
VRT
ISGND
SDA
SCL
/OE
/RES
XTAL1
XTAL2
TMS
TDI
TCK
LLC2
PIXCLK
HREF
VREF
FIELD
VACT
LLC
CVBS1
CVBS2
CVBS3
CVBS4
CVBS5
CVBS6
CHROMA1
CHROMA2
VOUT1
VOUT2
VOUT3
VOUT4
COUT1
COUT2
GND
VIDEO1
VIDEO2
VIDEO3
VIDEO4
CHROMA1
CHROMA2
VIDCLK2
VIDCLK1
BDATA[8..15]
CVBS
AV1_VIDEO_IN
AV2_VIDEO_IN
AV3_VIDEO_IN
AV4_VIDEO/Y_IN
S-VHS1_LUMINANCE_IN
S-VHS1_CHROMA_IN
S-VHS2_CHROMA_IN
SDA_B
SCL_B
RESET
X2 20.25 MHz
Q21 KSC1623Y
SHOULD BE CONNECTED AT ONE POINT.
AXGND
VGND
ACGND

(7)SCALER

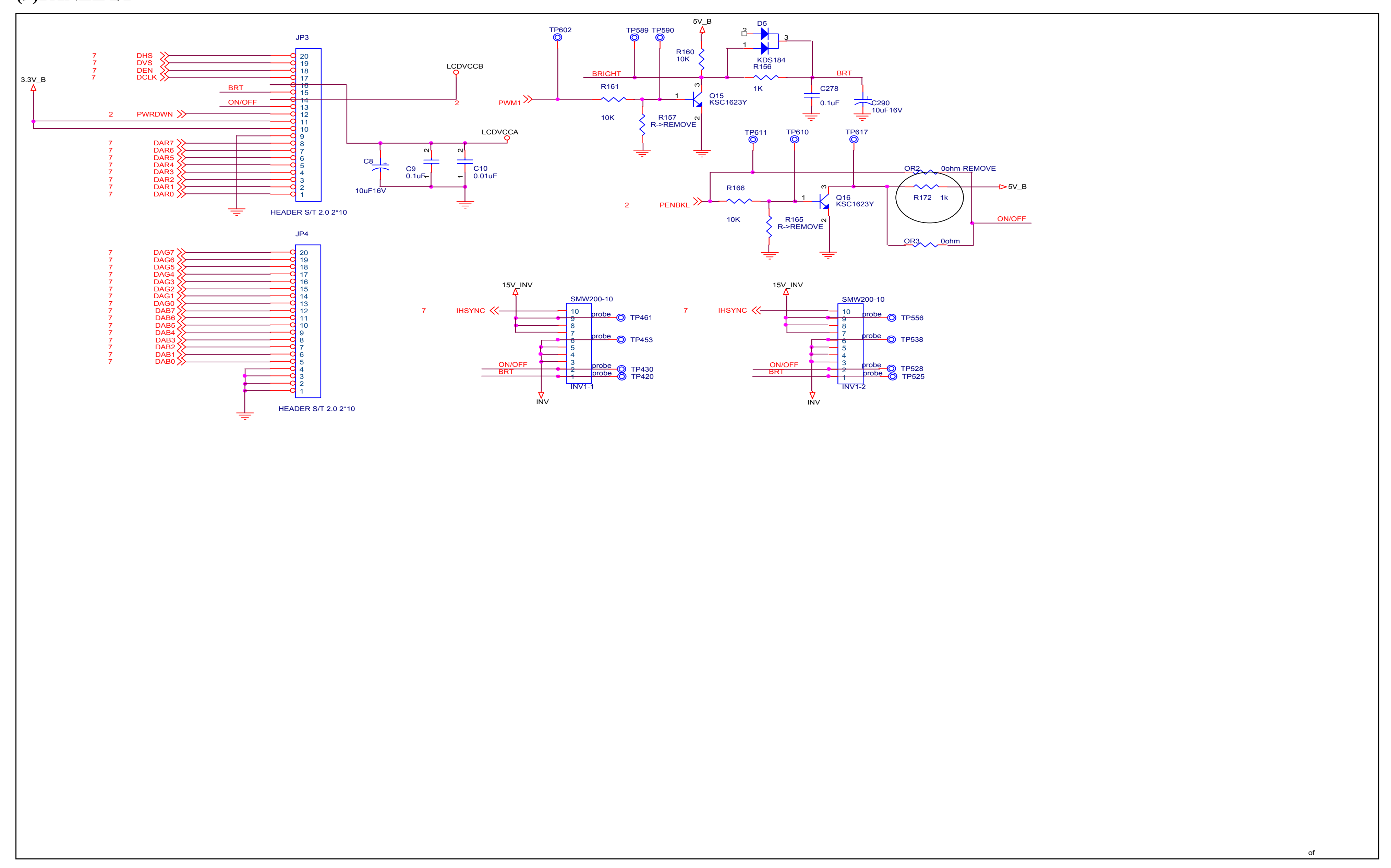

U11
gm6015
PQFP208
3.3V_CA
3.3V_CB
2.5V_B
3.3V_BB
5V_B
VGARED[0..7]
VGAGRN[0..7]
VGABLU[0..7]
VGA_HS2
ACLK
ACLAMP
ASOG+
ASOG-
BDATA[0..7]
BDATA[8..15]
VIDCLK1
VIDCLK2
SCL_B
SDA_B
RESET
/IRQ
XTAL
X1
14.318MHz
Q10
KSR1102
DAG[0..7]
DAB[0..7]
DAR[0..7]
DCLK
DEN
DVS
DHS
MD[0..31]
MA[0..10]
BS0
BS1
DQM
WE#
RAS#
CAS#
MCLK
HSYNC
U34
MTV130P(SOP)
RN18
RN15
L43
L31
HH-1M3216-121
C58
REMOVE
C118
REMOVE
R102
REMOVE
R103
Remove

(8)MEMORY

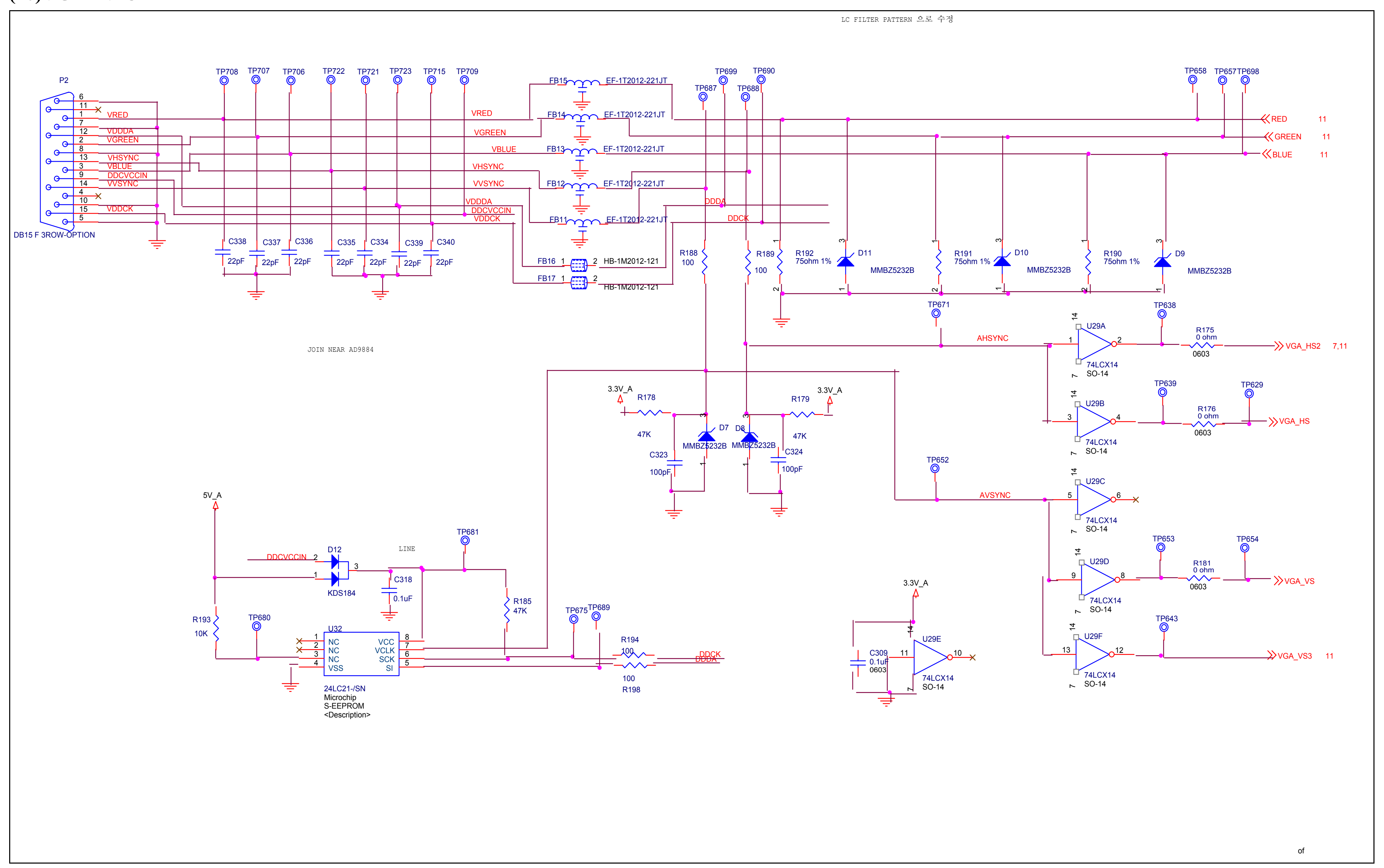


3.3V_BA
C163
22uF/6.3V
C150
0.1uF
C152
0.1uF
C132
0.1uF
C83
0.1uF
C69
0.1uF
C82
0.1uF
C86
220pF
C96
220pF
C123
220pF
C131
220pF
C136
220pF
C140
220pF
3.3V_B
L29
HB-1M2012-320(0.6A)
C164
0.1uF
C158
0.1uF
TP229
MD[0..31]
MA[0..10]
U12
K4S643232C-TCL/55
BS0
BS1
MCLK
CS#
RAS#
CAS#
WE#
DQM
RN11 10k
RN13 10k
MA10
RN14 10k
RN12 10k
II C HOST PROTOCOL; TCLK FREQ= 14.31818
6010 I2C address fixed to B2/B3
PLACE RN CLOSE TO MEMORY ICs

(9)PANEL I/F

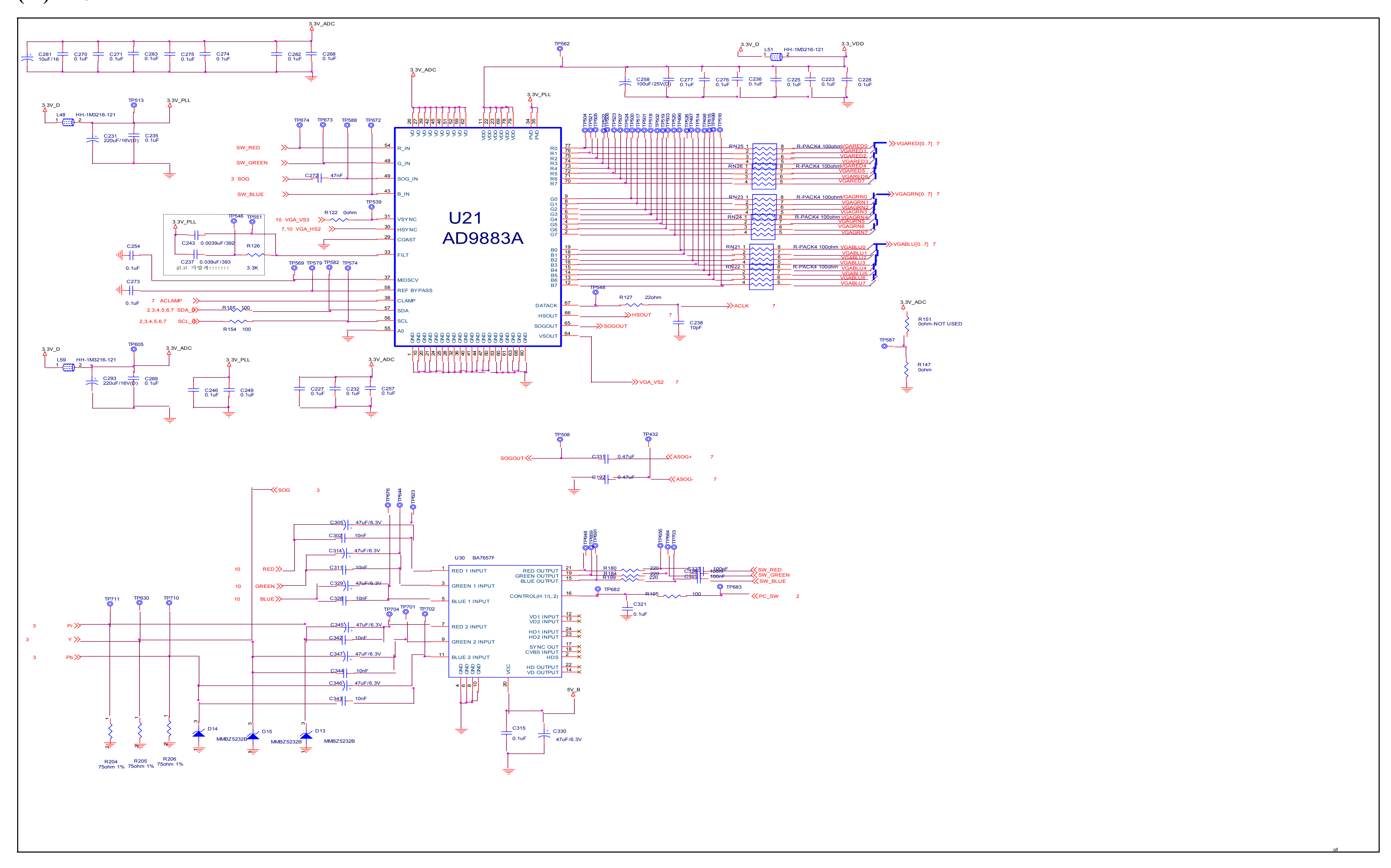

JP3
HEADER S/T 2.0 2*10
DHS
DVS
DEN
DCLK
3.3V_B
BRT
ON/OFF
PWRDWN
DAR7
DAR6
DAR5
DAR4
DAR3
DAR2
DAR1
DAR0
LCDVCCB
LCDVCCA
C8
10uF16V
C9
0.1uF
C10
0.01uF
JP4
HEADER S/T 2.0 2*10
DAG7
DAG6
DAG5
DAG4
DAG3
DAG2
DAG1
DAG0
DAB7
DAB6
DAB5
DAB4
DAB3
DAB2
DAB1
DAB0
TP602
TP589
TP590
5V_B
R160
10K
D5
KDS184
BRIGHT
R161
10K
PWM1
R157
R->REMOVE
Q15
KSC1623Y
R156
1K
BRT
C278
0.1uF
C290
10uF16V
TP611
TP610
TP617
OR2
0ohm-REMOVE
R166
10K
PENBKL
R165
R->REMOVE
Q16
KSC1623Y
R172
1k
5V_B
ON/OFF
OR3
0ohm
15V_INV
SMW200-10
IHSYNC
probe
TP461
TP453
TP430
TP420
ON/OFF
BRT
INV1-1
INV
15V_INV
SMW200-10
IHSYNC
TP556
TP538
TP528
TP525
INV1-2
INV
of

(10)VGA INPUT



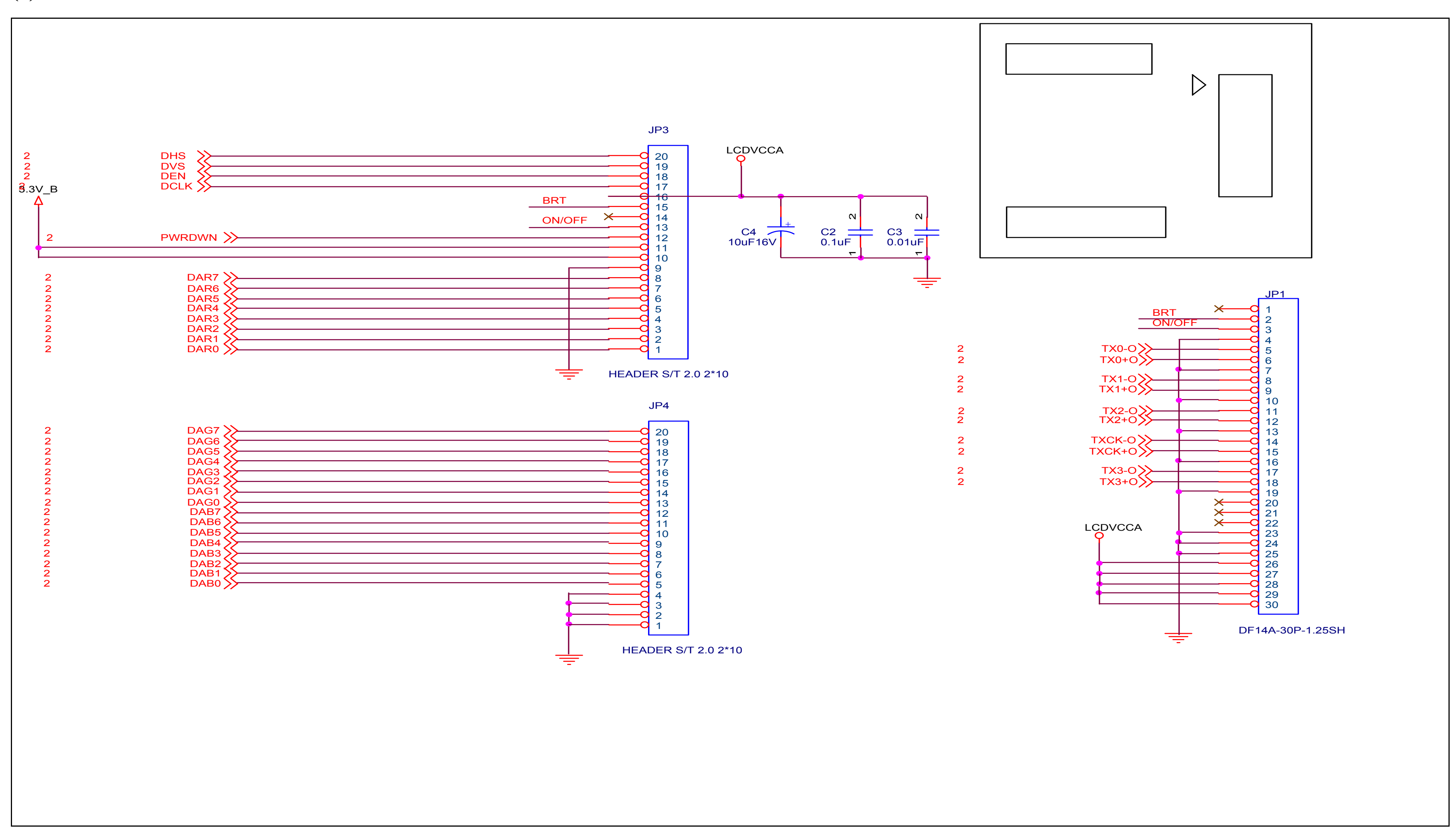
LC FILTER PATTERN 으로 수정
P2
DB15 F 3ROW-OPTION
VRED
VDDDA
VGREEN
VHSYNC
VBLUE
DDCVCCIN
VVSYNC
VDDCK
TP708 TP707 TP706 TP722 TP721 TP723 TP715 TP709
C338 C337 C336 C335 C334 C339 C340
22pF
FB15 EF-1T2012-221JT
FB14 EF-1T2012-221JT
FB13 EF-1T2012-221JT
FB12 EF-1T2012-221JT
FB11 EF-1T2012-221JT
FB16 HB-1M2012-121
FB17 HB-1M2012-121
TP687 TP699 TP690 TP688
DDDA
DDCK
R188 100
R189 100
R192 75ohm 1%
R191 75ohm 1%
R190 75ohm 1%
D11 D10 D9
MMBZ5232B
TP658 TP657 TP698
RED 11
GREEN 11
BLUE 11
JOIN NEAR AD9884
TP671
AHSYNC
TP638
U29A
74LCX14
SO-14
R175 0 ohm 0603
VGA_HS2 7,11
TP639 TP629
U29B
R176 0 ohm 0603
VGA_HS
3.3V_A
R178 47K
R179 47K
D7 D8
MMBZ5232B
C323 100pF
C324 100pF
TP652
AVSYNC
U29C
TP653 TP654
U29D
R181 0 ohm 0603
VGA_VS
TP643
U29F
VGA_VS3 11
5V_A
DDCVCCIN
D12
KDS184
LINE
TP681
C318 0.1uF
R185 47K
R193 10K
TP680
U32
NC NC NC VSS
VCC VCLK SCK SI
24LC21-/SN
Microchip
S-EEPROM
<Description>
TP675 TP689
R194 100
R198 100
U29E
C309 0.1uF 0603
of

(11)ADC

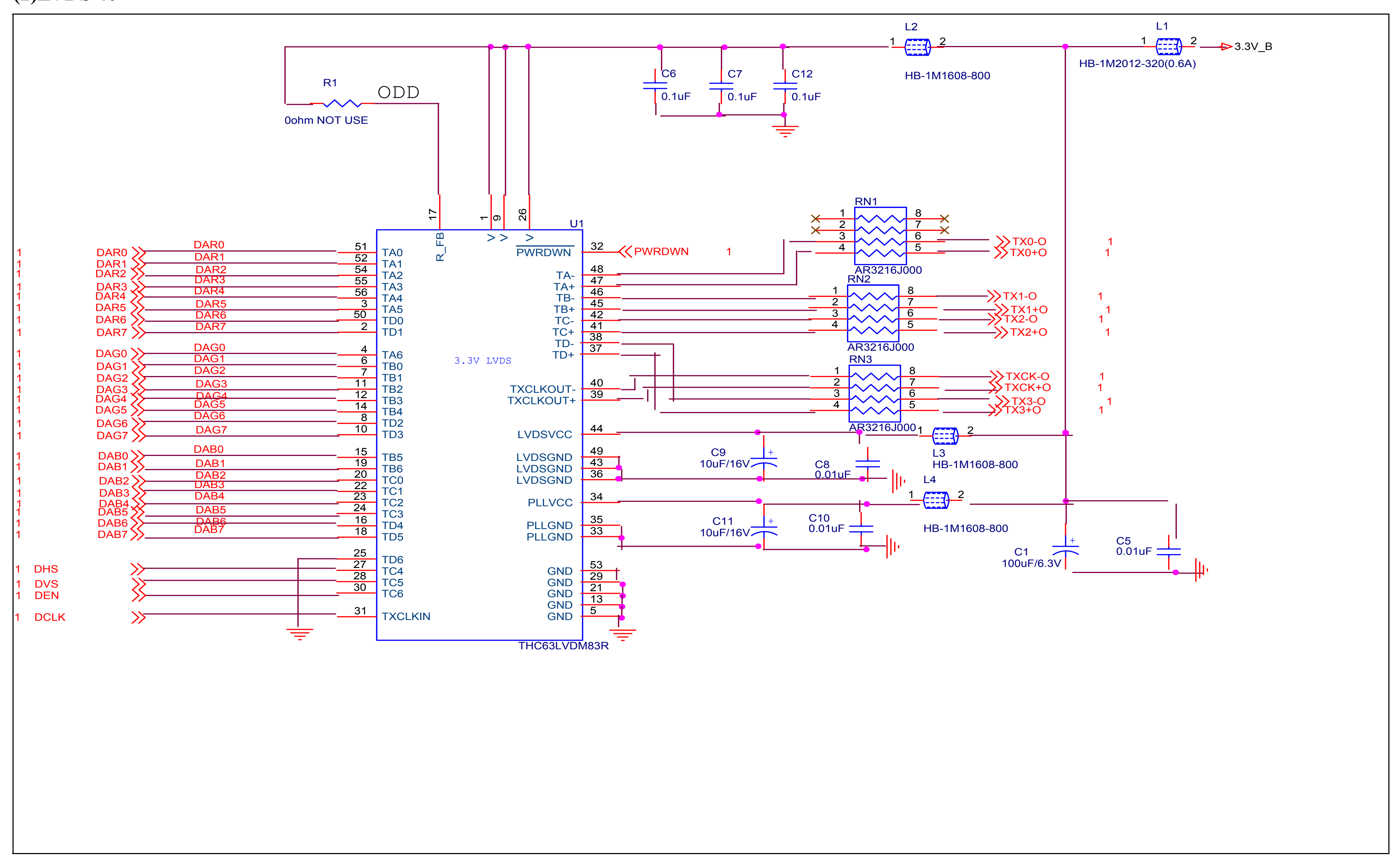


- LVDS SUB Circuit Diagram -

(1) CONNECTOR



(2)LVDS 40



- Main BOM LIST

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
100-7128B4-GC0	PCB MAIN	LTV1280B REV:GC	1.000	Q&TECH	
200-140043-660	IC-TTL TSSOP-14	74LCX14MTCX	1.000		U29
201-443500-180	IC SO-8	FDS4435	1.000		U28
210-241600-150	IC-EEPROM SO-08	24LC16B-/SN	0.000		
210-241600-152	IC-EEPROM SO-08	CAT24WC16J	1.000		U22
210-242100-151	IC-EEPROM SO-08	ST24LC21BM6TR	1.000		U32
211-K4S643-400	IC-SDRAM TSOP2-86	K4S643232C-TC55000	1.000		U12
211-K4S643-401	IC-SDRAM TSOP2-86	HY57V653220BTC-55DRA	0.000		
211-M12L64-402	IC SDRAM	M12L64322A-6T/86P	0.000		
230-GM6015-300	ZOOM-IC PQFP-208	gm6015.BD	1.000		U11
231-988311-300	IC-ADC LQFP-80	MST9883A-110	1.000		U21
232-322600-000	IC VIDEO DECODER	VPX3226E/PMQFP-44P	1.000		U14
232-323000-300	IC-VIDEO PQFP-80	VPC3230D-QA-C5	1.000		U10
233-151700-000	IC-AMP DIP-18	TDA1517P	1.000		U3
233-151700-001	IC-AMP DIP-20	TPA1517NE/TI	0.000		
233-3420G0-001	IC PQFP-80/IQT 사급	MSP3420GC12	1.000		U7
233-455800-000	IC SO-8P	KA4558	1.000		U2
233-511400-000	DIP-16	TEA5114A	1.000		U5
233-641500-100	IC OP AMP SOT163-1	TEA6415CD	1.000		U8
235-SDA555-000	P-MQFP100	SDA5550M	1.000		U25
240-765700-100	IC-SWITCH VERSION:E2	BA7657F-E2/SOP24	1.000		U30
260-702500-000	IC RESET SOT-89	KIA7025AF	1.000		U18

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
260-MTV130-110	IC OSD	MTV130P-59/CHINA 16P	1.000		U34
262-108500-502	IC-REG 2L TO-263	AMS1085CM-3.3	2.000		U13,U20
262-108500-503	IC-REG 2L TO-263	AMS1085CM-2.5	1.000		U16
262-111700-103	IC-REG SOT-223	AME1117BCGT-2.5	0.000		
262-111700-104	IC-REG SOT-223	AME1117CCGT-3.3	0.000		
262-111700-113	IC-REG/SOT223	AMS1117-2.5	1.000		U31
262-111700-114	IC-REG/SOT223	AMS1117-3.3	4.000		U4,U19,U24,U27
262-780900-000	IC-REG D2PAK	L7809ABD2T	1.000		U26
262-L4973D-000	SO-20	L4973D5.1	1.000		U23
262-L4978D-000	SO-16W	L4978D	1.000		U15
270-110200-200	TRANSISTER SOT-23	KSR1102	2.000		Q10,Q13
270-162300-200	TRANSISTER SOT-23	KSC1623Y	22.000		Q5-9,Q12,Q14-29
271-993300-200	IC-FET SO-08	SI9933ADY	1.000		U9
280-184000-200	DIODE SOT-23	KDS184	2.000		D12,D5
280-184000-201	DIODE SOT-23	BAV70LT1/KDS184	0.000		280-184000-200
282-256000-200	DIODE ZENER SOT-23	Z02W5.6V	10.000		D7-11,D13-15,D1-2
283-340000-200	DIODE SMD	B340A	0.000		
283-340000-201	Diode/B340A/SMD-ty	ZIBO/SMA/3.0A	2.000		D3-4
283-340001-201	RECTIFIERS	S1G-SMA	1.000		D6
300-000003-220	R-CARBON SMD	CR1608-000J	15.000		R122,R147,R175-176,R181,R79,R93,R96,R104-105,R215-216,OR3,R128,R226
300-101003-220	R-CARBON SMD	CR1608-101J	38.000		R25,R47,R95,R98,R118-119,R141,R158-159,R162,R209-210,R7,R8,R154-155,R194-195,R198,R188,R189,R35-37,R51,R63,R80,R137,R75-76,R106,R112,R207,R22,R24,R59-60,R42

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
300-101003-240	R-CARBON SMD	CR3216-101J	2.000		R11-12
300-102003-220	R-CARBON SMD	CR1608-102J	20.000		R48,R66,R78,R99,R131,R140,R144,R146,R52,R74,R135,R15,R201-202,R213,R156,R203,R217-218,R172
300-103003-220	R-CARBON SMD	CR1608-103J	30.000		R55,R88,R91,R100-101,R130,R138,R150,R152,R164,R167,R169,R171,R173,R186,R197,R208,R193,R32,R41,R53,R160-161,R166,R13,R3-4,R214,R115,R224
300-104003-220	R-CARBON SMD	CR1608-104J	10.000		R89-90,R116,R187,R196,R33,R43,R77,R85,R19
300-153003-220	R-CARBON SMD	CR1608-153J	2.000		R110,R129
300-181003-220	R-CARBON SMD	CR1608-181J	1.000		R61
300-201003-220	R-CARBON SMD	CR1608-201J	3.000		R148-149,R170
300-203003-220	R-CARBON SMD	CR1608-203J	4.000		R125,R134,R142,R183
300-220003-220	R-CARBON SMD	CR1608-220J	1.000		R127,R34
300-221003-220	R-CARBON SMD	CR1608-221J	3.000		R180,R184,R199
300-222003-220	R-CARBON SMD	CR1608-222J	1.000		R168
300-272003-220	R-CARBON SMD	CR1608-272J	4.000		R132-133,R109,R1
300-330003-220	R-CARBON SMD	CR1608-330J	1.000		R50
300-331003-220	R-CARBON SMD	CR1608-331J	1.000		R136
300-332003-220	R-CARBON SMD	CR1608-332J	7.000		R126,R2,R219-221,R222-223
300-333003-220	R-CARBON SMD	CR1608-333J	1.000		R182
300-391003-220	R-CARBON SMD	CR1608-391J	5.000		R23,R27,R30,R174,R177
300-392003-220	R-CARBON SMD	CR1608-392J	1.000		R49
300-432003-220	R-CARBON SMD	CR1608-432J	1.000		R145
300-470003-220	R-CARBON SMD	CR1608-470J	4.000		R62,R69,R121,R211
300-471003-220	R-CARBON SMD	CR1608-471J	5.000		R67,R39-40,R108,R113

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
300-472003-220	R-CARBON SMD	CR1608-472J	4.000		R107,R123-124,R225
300-473003-220	R-CARBON SMD	CR1608-473J	6.000		R54,R72,R178-179,R185,R18
300-512003-220	R-CARBON SMD	CR1608-512J	4.000		R5-6,R9-10
300-680003-220	R-CARBON SMD	CR1608-680J	3.000		R56,R70,R212
300-681003-220	R-CARBON SMD	CR1608-681J	1.000		R163
300-683003-220	R-CARBON SMD	CR1608-683J	1.000		R71
300-750001-220	R-CARBON SMD	CR1608-750F	24.000		R38,R44,R81-84,R68,R46,R14,R16,R20-21,R26,R29,R45,R64,R190-192,R204-206, R86-87
300-750003-220	R-CARBON SMD	CR1608-750J	1.000		R28
300-822003-220	R-CARBON SMD	CR1608-822J	1.000		R65
300-912003-230	R-CARBON SMD	CR1608-912J	2.000		R111,R153
303-101003-240	R-ARRAY SMD	RP164J101CS	12.000		RN21-26,RN4-9
303-103003-240	R-ARRAY SMD	RP164J103CS	6.000		RN11-14,RN18,RN27
303-220003-240	R-ARRAY SMD	RP164J220CS	5.000		RN16-17,RN19-20,RN15
303-470003-240	R-ARRAY SMD	RP164J470CS	1.000		RN10
303-472003-240	R-ARRAY SMD	RP164J472CS	1.000		RN28
320-1001E3-220	C-CERAMIC SMD	0603N100J500NT	2.000		C114,C238
320-1011E3-220	C-CERAMIC SMD	0603N101J500NT	3.000		C19,C323-324
320-1021E4-220	C-CERAMIC SMD	0603B102K500NT	11.000		C5-6,C39,C350,C215,C348-349,C358-359,C128-129
320-1031E4-220	C-CERAMIC SMD	0603B103K500NT	19.000		C1,C40,C130,C341,C310,C319,C302,C311,C328,C342-344,C109,C151,C160,C182, C10,C14-15
320-1041E6-220	C-CERAMIC SMD	0603F104Z500NT	7.000		C41,C100,C209,C325-327,C256
320-1051E3-220	C-CERAMIC SMD	0603N105Z500NT	8.000		C17,C27,C37-38,C54-55,C133,C262
320-1061E3-230	C-CERAMIC SMD	C2012-106Z	6.000		C93,C144-146,C148-149

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
320-1511E3-220	C-CERAMIC SMD	0603N151J500NT	1.000		C285
320-1521E4-220	C-CERAMIC SMD	0603B152K500NT	5.000		C74,C80,C105,C121,C181
320-1801E3-220	C-CERAMIC SMD	0603N180J500NT	3.000		C259-260,C288
320-2201E3-220	C-CERAMIC SMD	0603N220J500NT	8.000		C334-340,C364
320-2211E3-220	C-CERAMIC SMD	0603N221J500NT	23.000		C70,C72,C86-87,C96-97,C101,C119,C123-124,C131,C136,C140,C166,C185,C190, C193,C201,C286,C207,C180,C84,C107
320-2221E3-220	C-CERAMIC SMD	0603N222K500NT	1.000		C212
320-2231E4-220	C-CERAMIC SMD	0603B223Z500NT	2.000		C213,C267
320-2241E6-220	C-CERAMIC SMD	0603F224Z500NT	17.000		C56,C60,C68,C90-92,C125-126,C75,C122,C179,C79,C147,C4,C76,C221,C255
320-2721E3-220	C-CERAMIC SMD	0603B272K500NT	1.000		C247
320-3301E3-220	C-CERAMIC SMD	0603N330J500NT	1.000		C58
320-3311E3-220	C-CERAMIC SMD	0603N331J500NT	12.000		C18,C46,C59,C61,C135,C77,C264-265,C291,C354,C360-361
320-3341E3-220	C-CERAMIC SMD	0603N334Z500NT	8.000		C47,C51,C57,C62,C65,C81,C85,C95
320-3911E3-220	C-CERAMIC SMD	0603N391K500NT	2.000		C73,C110
320-3921E3-220	C-CERAMIC SMD	0603B392K500NT	1.000		C243
320-3931E4-220	C-CERAMIC SMD	0603B393Z500NT	1.000		C237
320-4711E3-220	C-CERAMIC SMD	0603N471K500NT	1.000		C94
320-4731E3-220	C-CERAMIC SMD	0603B473Z500NT	2.000		C206,C272
320-4741E6-220	C-CERAMIC SMD	0603F474Z500NT	2.000		C192,C331
320-5601E3-220	C-CERAMIC SMD	0603N560J500NT	2.000		C32-33
320-5R01E3-220	C-CERAMIC SMD	0603N5R0D500NT	8.000		C217-218,C194-195,C172-173,C30-31
320-6841E6-220	C-CERAMIC SMD	0603F684Z500NT	3.000		C143,C214,C134
322-1061C5-210	C-EL SMD/85도	SC10uF16V 4*5	0.000		
322-1071C5-213	C-EL SMD/105도	RGV100uF16V 6.3*8	1.000		C67

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
322-1061C5-212	C-EL SMD/85도	REV10uF16V 4*5	23.000		C3,C11,C16,C23-24,C36,C112,C138-139,C156,C157,C162,C50,C115-116,C161,C174,C177-178,C220,C8,C290,C353
322-1061C5-213	C-EL SMD/105도	RGV10uF16V 4*5	2.000		C203,C210,C281
322-1071C5-213	C-EL SMD/105도	RGV100Uf16v 6.3*8	1.000		C67
322-1071C5-252	C-EL SMD	REV100uF/16V 6.3*5	4.000		C111,C205,C300-301
322-1071E5-101	C-EL/85C	SE100uF/25V 8*5	0.000		
322-1071H5-162	C-EL DIP/85	YK100uF/50V 8*11.5	2.000		C258,C355
322-1071H5-382	C-EL DIP/105도	YXA100uF50V 8*11.5	2.000		C7,C303
322-2260J5-214	C-EL SMD/85	REV22uF16/4*5.5	3.000		C230,C239,C222
322-2261C5-220	C-EL SMD/85도	SC22uF16V 5*5	1.000		C224
322-2261C5-223	C-EL SMD/105도	RGV22uF16V5*5.5	7.000		C103-104,C141,C163,C165,C175,C204
322-2271C5-100	C-EL DIP	SV220uF16V 8*9	0.000		
322-2271E5-262	C-EL DIP	YK220uF25V 8*11.5	3.000		C211,C231,C293
322-2271E5-362	C-EL DIP/105도	YXA220uF25V 8*11	3.000		C196,C263,C296
322-3351H5-210	C-EL SMD	SC3.3uF50V 4*5	0.000		
322-3351H5-212	C-EL SMD	REV3.3uF50V 4*5	1.000		C117
322-4741H5-100	C-EL SMD	SC0.47uF50V 4*5	0.000		322-4741H5-102
322-4741H5-102	C-EL SMD	REV0.47uF50V 4*5	1.000		C2
322-4741H5-212	C-EL SMD/105도	RGV0.47uF50V 4*5	1.000		C248
322-4751G5-212	C-EL SMD/105도	RGV4.7uF35V 4*5	1.000		C64
322-4760J5-220	C-EL SMD	SC47uF6.3V 5*5	0.000		
322-4760J5-222	C-EL SMD	REV47uF6.3V 5*5	11.000		C305,C314,C329,C330,C345,C346,C347,C240,C304,C307,C312

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
322-4760J5-223	C-EL SMD/105도	RGV47uF6.3V 5*5	1.000		C42
322-4761C5-232	C-EL SMD/85도	REV47uF16V 6.3*5	1.000		C363
322-4761E5-100	C-EL	SE47uF25V 6.3*5	0.000		
322-4761E5-232	C-EL SMD	REV47uF25V 6.3*5.3	1.000		C197
322-4761H5-262	C-EL DIP	YK47uF50V 6.3*11	2.000		C28-29
322-4771C5-100	C-EL/105도	KMG470uF16V 8*12	3.000		C198,C234,C252
322-4771E5-180	C-EL/85도	SHL470uF25V/10*12.5	3.000		C21,C52,C313
326-1042A3-000	C-MYLER BG	2A 104J/100V	2.000		C356-357
341-010000-200	INDUCTOR SMD	BDS-7550D-101K	4.000		L15,L27,L41,L61
341-010021-200	INDUCTOR MPP SMD	BDS-1075R-101M	1.000		L45
341-012021-200	INDUCTOR MPP SMD	BDS-1075R-121M	1.000		L35
344-121003-220	FERRITE-BEAD SMD	HB-1M1608-121JT	14.000		L47,L49,L54,L58,L60,L62-65,L69,L42,L28,L75,FB8
344-121003-230	FERRITE-BEAD SMD	HB-1M2012-121JT	5.000		L24,L30,L36,FB16-17
344-121103-240	FERRITE-BEAD SMD	HH-1M3216-121JT	10.000		L22,L31,L39,L43,L48,L51,L59,L37,L68,L78
344-601003-240	FERRITE-BEAD SMD	HH-1M3216-601J	2.000		L79,L23
344-121203-260	FERRITE-BEAD SMD	HU-1H4532-121JT	2.000		FB9-10
344-300003-231	LC FERRITE SMD	LC-2012-300JT	10.000		L3-7,L70-74
344-320003-230	FERRITE-BEAD SMD	HB-1H2012-320JT	15.000		FB5-7,FB13-15,L17,L25,L29,L33-34,L38,L40,L44,L66
344-332003-230	FERRITE-BEAD SMD	FI-B2012-332K	12.000		L11,L13,L16,L18-19,L26,L52-53,L56,L20-21,L76
344-800003-230	FERRITE-BEAD SMD	HB-1M2012-800JT	6.000		FB1-4,FB11-12
344-823003-230	FERRITE-BEAD SMD	FI-C2012-822	1.000		L50
400-060000-100	X-TAL	6MHz /18pF 30ppm	1.000		Y3
400-14R318-100	X-TAL ATS	14.318MHz	1.000		X1
400-18R432-100	X-TAL ATS	18.432MHz/18pF 30ppm	1.000		Y1

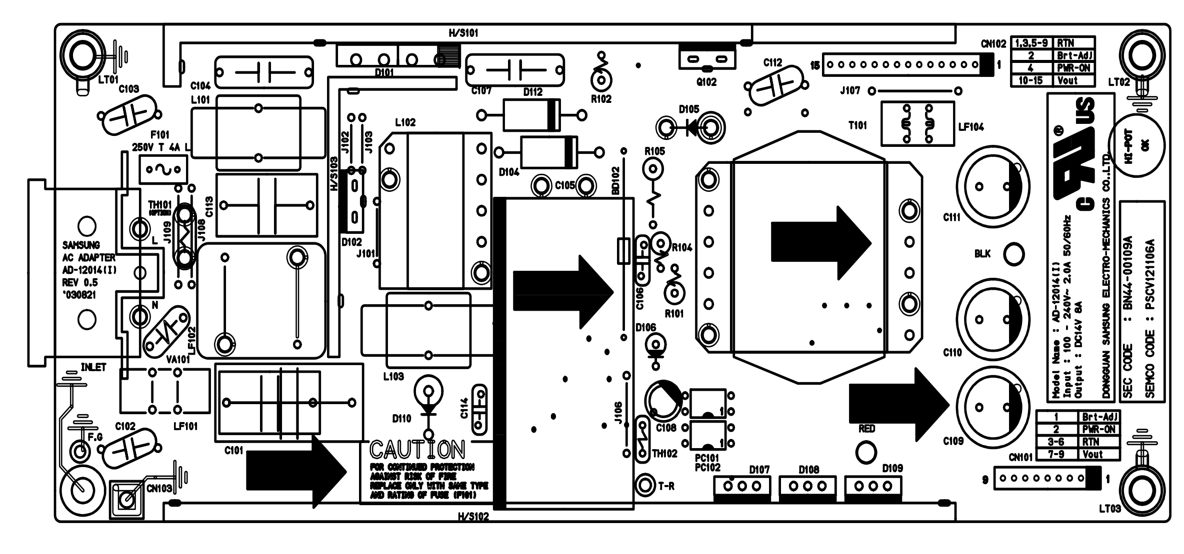
CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
400-20R251-110	X-TAL ATS/FUND	20.25.MHz/13pF 30ppm	2.000		Y2,X2
501-SHUNT0-100	CONNECTOR JUMPER	SHUNT/2.5mm	1.000		
502-002201-100	CONNECTOR-WAFER R/A	5268-02 2.5MM	2.000		JL1,JR1
502-004001-201	CONNECTOR-WAFER R/A	12505WR-04A00/1.25mm	2.000		JP8,SPK1
502-005102-221	CONNECTOR-WAFER SMD	20022WR-05A00	0.000		502-005102-220
502-007001-201	CONNECTOR-WAFER R/A	12505WR-07A00/1.25mm	1.000		JP1
502-009101-160	CONNECTOR-WAFER R/A	SMAW200-09P	1.000		PWR3-1
502-010100-160	CONNECTOR-WAFER	SMW200-10/ST	2.000		INV1,INV2
502-011001-201	CONNECTOR-WAFER R/A	12505WR-11/1.25mm	1.000		J1
502-050602-241	CONNECTOR-WAFER SMD	05002HR-50A01	0.000		
511-032000-200	SOCKET PLCC SMD	32P	1.000		U33
511-032000-210	SOCKET PLCC SMD	32P	0.000		500-032000-200
520-010300-100	HEADER-PIN S/T	1*3P 2.5mm	1.000		JP6
520-024000-110	HEADER-PIN R/A	PH01-40DR/2*20P	1.000		P1
520-040200-200	HEADER-PIN S/T SMD	SPTB2-08-020-A-0.4X2	1.000		JP7
521-021000-100	HEADRT SOCKETK S/T	PTF2-20S2-020-B(2*10	2.000		JP3-4
530-160400-121	JACK RCA/ADDSHIELD	JW-1604S/W,R/2P	1.000		J5
530-310400-101	JACK RCA/ADDSHIELD	JW-3104S/G,BL,R/3P	1.000		J4
540-031501-110	CONNECTOR-DSUB R/A	15P,3ROW,FEMALE	1.000		P2
320-1041E6-220	C-CERAMIC SMD	0603F104Z500NT	98.000		C9,C12,C34-35,C45,C69,C71,C82-83,C88-89,C98,C102,C106,C108,C113,C120,C127,C132,C137,C142,C150,C152-153,C158-159,C164,C167-171,C176,C183,C186-189,C191,C199-200,C202,C208,C216,C223,C225-228,C232-233,C235-236,C241-242,C244-246,C249-251,

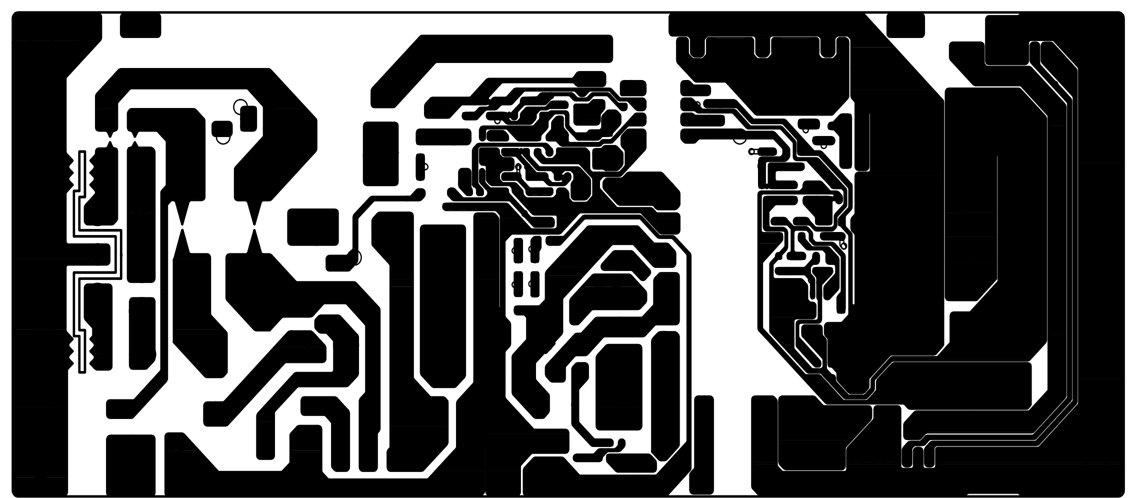
320-1041E6-220	C-CERAMIC SMD	0603F104Z500NT	0.000		C253-254,C257,C261,C266,C268-271,C273-280,C282-284,C287,C289,C294-295, C297-299,C306,C308-309,C315-316,C318,C320-322,C332-333

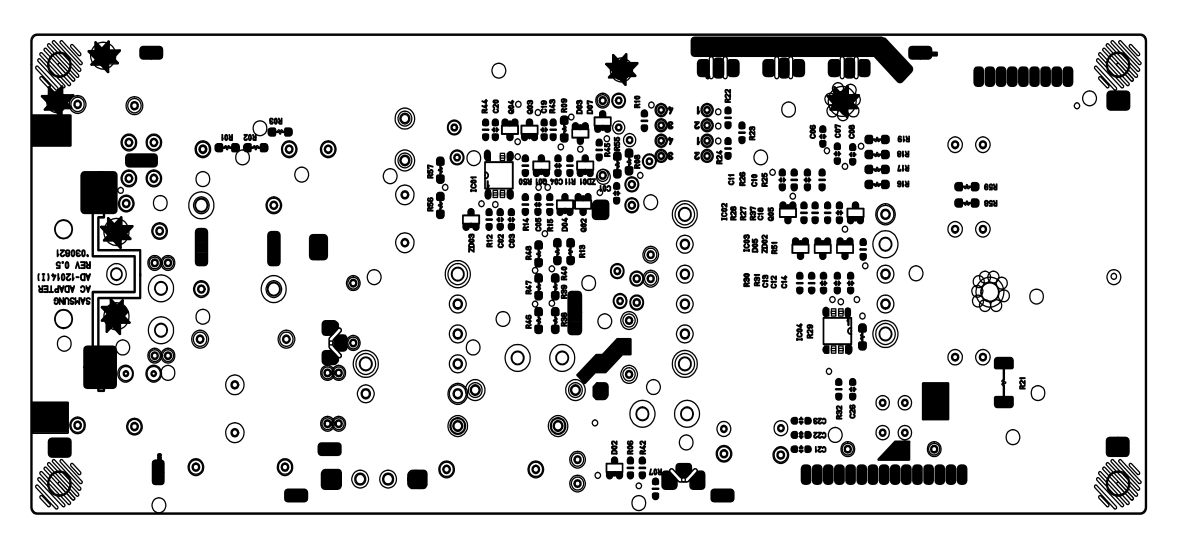
- LVDS SUB BOM LIST -

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
119-LVDS40-C00	작PCB SUB	LTV128A-LVDS40 REV.C	1.000		
236-63LV83-103	IC-LVDS DRIVER	THC63LVDM83R TSSOP56	1.000		U1
303-101003-240	R-ARRAY SMD	RP164J101CS	3.000		RN1-3
320-1031E4-220	C-CERAMIC SMD	0603B103K500NT	4.000		C3,C5,C8,C10
320-1041E6-220	C-CERAMIC SMD	0603F104Z500NT	4.000		C2,C6-7,C12
322-1061C5-210	C-EL SMD/85도	SC10uF16V 4*5	3.000		C4,C9,C11
322-1061C5-212	C-EL SMD/85도	REV10uF16V 4*5	0.000		
322-1071C5-230	금C-EL SMD	SC100uF/6.3V 6.3*5	0.000		
322-1071C5-232	금C-EL SMD	REV100uF/6.3V 6.3*5	1.000		
322-1071C5-252	C-EL SMD	REV100uF/16V 6.3*5	0.000		
344-320003-230	FERRITE-BEAD SMD	HB-1H2012-320JT	1.000		L1
344-800003-220	FERRITE-BEAD SMD	HB-1M1608-800JT	3.000		L2-4
502-030002-240	CONNECTOR-WAFER SMD	DF14-30P-1.25H,1.25m	1.000		
502-030002-241	CONNECTOR-WAFER SMD	12507WR-30000	0.000		
520-021000-100	HEADER-PIN S/T(2*10)	LPTB2-20S2-020-A	2.000		P3-4

PCB Drawing







		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

Circuit Diagram

SAMSUNG CONFIDENTIAL

IMAGE QUEST AD-12014(I)ST 14V 8A

* PWM IC : ON-Semi NCP1203D6R2

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2004.02.23 REV 0.2

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		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

Partlist

L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
			DIP COMPONENT(Component Side Component)					
	HEAT SHINK1	R0 R1	AL A1050P 3t PRIMARY	EA	1	MIKYOUNG ZHENGCHENG	FOR PRIMARY PCB GND	ML62-00258A
	HEAT SHINK2	R0 R1	AL A1050P 3t SECONDARY	EA	1	MIKYOUNG ZHENGCHENG	FOR SECONDARY PCB GND	ML62-00256F
	HEAT SHINK3	R0 R1	AL A1050P 2t SECONDARY	EA	1	MIKYOUNG ZHENGCHENG	BETWEEN LF102 & L102	ML62-00256V
	INSULATOR1	R0 R1	PET FR1 t=0.25*2, V-0	EA	1	SHIUFUNG YOUNGDONG	FOR ASS'Y	ML62-00257M
	INSULATOR2	R0 R1	PC FR60 t=0.5, V-0	EA	1	SHIUFUNG YOUNGDONG	FOR LF102	ML62-00257D
	SCREW MACHINE	R0 R1	FH,+,M2.6L8,NI-PLT,SWRCH18A	EA	1	SAMPUNG PUGANG	FOR D102,107,108,109	6001-001807
	SCREW MACHINE	R0 R1	FH,+,M2.6L10,NI-PLT,SWRCH18A	EA	5	SAMPUNG PUGANG	FOR Q102,D101	6001-001827
	NUT-HEXAGON	R0 R1	2C,M2.6,ZPC(YEL),SM20C	EA	6	SAMPUNG PUGANG	FOR Q102,D101,102,107,108,109	6021-000141
	INSULATOR-RING	R0 R1	RING R6,13,T	EA	3	DONGA YUNG CHAMPION	601F-Vo	ML72-00082A
	SIL-PAD	R0 R1	SIL-PAD1000, SP-17*13P	EA	3	BERQUEST SHIUFUNG	FOR PFC DIODE & OUTPUT DIODE 3POINT	ML72-00240K
	WASHER-E.T	R0 R1	M8.5,ID3.5,OD4.0,T0.45 ZPC(YEL)	EA	1	SAMPUNG PUGANG	U58	6031-000514
	EYELET	R0	BS53-1/2, T=0.25	EA	14	PUGANG	EYELET-SMALL	6042-001003
	INDICATOR-GENERAL	R0	PET-SILVER, GRAY	EA	1	DONGWON,ZHEN FENG	FOR ADAPTER VINIL	ML68-00068A
	HI-POT LABEL	R0 R1 R2	WHITE 5*5*0.125	EA	1	ZHENFENG SAMKWANG JIANSHENG		ML68-00292A

		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
PCB	PCB-MAIN	R0 R1	CEM-1 , 1.6T , 1oz, 200*80mm	EA	1	HSINTA TAICHUN	AD-12014(I)	ML41-00372X
INLET	INLET ASS'Y	R0 R1 R2	3PIN, ST-01 250V 10A	EA	1	SOLTEAM XINYA PANGGANG	ST-01T-BCK9	ML39-00595G
CN101		R0	N.A					
CN102	WAFER	R0 R1 R2 R3	15PIN WAFER	EA	1	YEONHO PANGGANG HUAXI XINYA	SMW200-15	3711-004352
CN103	CT-PIN	R0 R1	80010PS,14.1±0.1,Φ2.36±0.03	EA	1	YEONHO PUGANG	80010PS	3711-005188
LT01,02,03	CONNECTOR LUG	R0	SN,6m/m,RING	EA	3	MIKYOUNG		ML37-00021A
C101	CAP-F MPET	R0	1uF 275VAC MX2 26.5*12.5*21.5mm	EA	1	CARLI	MPX105K-E6	2301-001577
C102,103	CAP-C DS	R0 R1 R2	1.0nF,20%,400VAC,Y5U 1.0nF,20%,400VAC,Y5U 1.0nF,20%,400VAC,Y5U	EA	2	NETRONTECH JYHCHUNG(SUCESS) SAMHWA	HCYE2G102MAD 5SE102MT402 SDE102M	2201-000963 2201-000896
C104,107	CAP-C FILM	R0 R1 R2	0.47uF 450VDC 10%	EA	2	SHINSHIN PILKOR CARLI	AF474K2G16C	2301-001641
C105	CAP-AL	R0 R1 R2	220uF, 450V 25*45.5mm	EA	1	RUBYCON CAPXON	MXY 450V 220uF HL221M450N	2401-003904 2401-003978
C106,114	CAP-C DS	R0 R1 R2	2.2nF 1KVDC 10%	EA	2	NETRONTECH JYHCHUNG(SUCESS) SAMHWA	HCYB3A222KDT 8Y5P222K56 EKB3A222K10BF7	2201-000319 2201-000318
C108	CAP-AL	R0 R1 R3	47uF 35V 20% 11X6.3 47uF 35V 20% 11*6.3	EA	1	RUBYCON NICHICON CAPXON	YXF 35V 47uF UHE1V470MED1TA GL 35V 47uF	2401-003670
C109,110, 111	CAP-E AD	R0 R1 R2	1000uF 35V 20%	EA	3	RUBYCON NICHICON CAPXON	ZLH 35V 1000uF UHV1V102MHD GL 35V 1000uF	2401-003888

		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
C112	CAP-AL DS	R0 R1 R2	1.5nF,20%,400VAC,Y5U,TP,13*18.1 1.5nF,20%,400VAC,Y5U,TP,10.5*20 1.5nF,20%,400VAC,Y5U,TP	EA	1	NETRONTECH JYH CHUNG(SUCESS) SAMHWA	HCYE2G152MAD 5SE152MT402A97 SDE152M	2201-002070
C113	CAP-F MPET		N.A					
D101	DIODE-BRD	R0 R1	600V 6A, GBU 4P DIP 600V 6A, GBU 4P DIP	EA	1	VISHAY IR	GBU6J 6GBU06	0402-001258
D102	DIODE-FR	R0	600V 8A TO-220 3PIN, DIP	EA	1	VISHAY	FEPF16JT	0402-001595
D104,110	DIODE-FR	R0 R1	600V 4A, DO-201AD 600V 4A, DO-201AD	EA	2	VISHAY ON-SEMI	MUR460 MUR460	0402-001191
D105	DIODE-RECT	R0 R1	1000V 3A, DO-201AD 1000V 3A, DO-201AD	EA	1	VISHAY ON-SEMI	1N5408 1N5408	0402-001533
D106	DIODE-FR	R0	1000V 2A, SOD57	EA	1	VISHAY	BYV38	0402-000495
D107,108,109	DIODE-SCH	R0 R1	100V 40A TO-220 100V 40A TO-220	EA	3	IR STM	43CTQ100 STPS41H100CT	0402-001566
D112	DIODE-FR	R0	1000V 3A DO-201AD	EA	1	VISHAY	UF5408	0402-000013
Q102	MOS-FET	R0	800V 18A TO-220F,FULL-MOLD	EA	1	INFINEON	SPA17N80C3	0505-001790
R101,104	RES-DIP MOR	R0 R1	47K ohm 5% 2W AC BK 4*12mm	EA	2	ABCO FONGYA	MOR-2W 47K MOR-2W 47K	2003-000706
R102 (TUBE)	RES-DIP W/W	R0 R1	0.15 ohm 3W WIRE WINDING(Non) 1%	EA	1	HMR FONGYA	ARW 3N 0.15 Ω F ARW 3N 0.15 Ω F	2005-001193
R105	RES-DIP MOR	R0 R1	10 ohm 5% 1W AA BK 3.5*12mm	EA	1	ABCO FONGYA	MOR-1W 10 MOR-1W 10	2003-000156
F101	FUSE	R0 R1	250VAC, 4.0A, SS-5	EA	1	SAVEFUSE TECH WICKMANN	SS5-040-H TE5-392-1400	3601-001343

		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
T101	TRANSFORMER	R0 R1	600uH (100KHz)	EA	1	ACE CLOVER-HITECH	AD-12014S AD-12014S	ML26-00370J
L101	NORMAL FILTER	R0 R1	680uH 92T CM203173	EA	1	ACE CLOVER-HITECH	AD-120195N1 AD-120195N1	ML27-00391B
L102	PFC INDUCTOR	R0 R1	PFC CHOKE, 35:7T 200uH	EA	1	ACE CLOVER-HITECH	AD-12014P AD-12014P	ML27-00390E
L103	NORMAL INDUCTOR	R0 R1	53uH,CM166060	EA	1	ACE CLOVER-HITECH	AD-120195N2 AD-120195N2	ML27-00391A
LF101	LINE FILTER	R0	1.3mH MIN (16KHz) CLASS B	EA	1	TNC	CV340013SS	ML27-00387U
LF102	LINE FILTER	R0	16mH MIN (1KHz), 3.0A CLASS B	EA	1	TNC	CV930160P	ML27-00390D
LF104	OUTPUT COMMON	R0	33uH OR10x4-6HC ϕ0.8 4Ts	EA	1	TNC	CV075033P	ML27-00390S
PC101,102	PHOTO COUPLER	R0	DIP-4P CTR:100-300%	EA	2	TOSHIBA	TLP421-GR	0604-001232
TH101			N.A					
TH102	THERMISTOR-PTC	R1 R2	100°C(PTC) 100°C(PTC)	EA	1	HIEL(SAMYANG) THERMOMETRICS	SYPGR10850JD04 TH410J40GBDS-T5	1404-001253 1404-001210
VA101 (TUBE)	SURGE ABSORBER	R0 R1	560V,2500A,14*8.5mm,TP	EA	1	ILJIN THINKING	INR10D561K TVR10561	1405-000152
BD102	BEAD CORE LEAD	R0 R1	COIL LFT 0.65MM 0.8uH,RW	EA	1	ACE NAMYANG	3550 3550	ML27-00096A
J101,102,103, 106,107,108, 109	JUMPER	R0 R1 R2	SDACW,-52mm,1/0.6mm,-,NTR	EA	7	FONGYA HMR SAMEUN	HCS-0401-12 HCS-0401-12 HCS-0401-12	3811-000545

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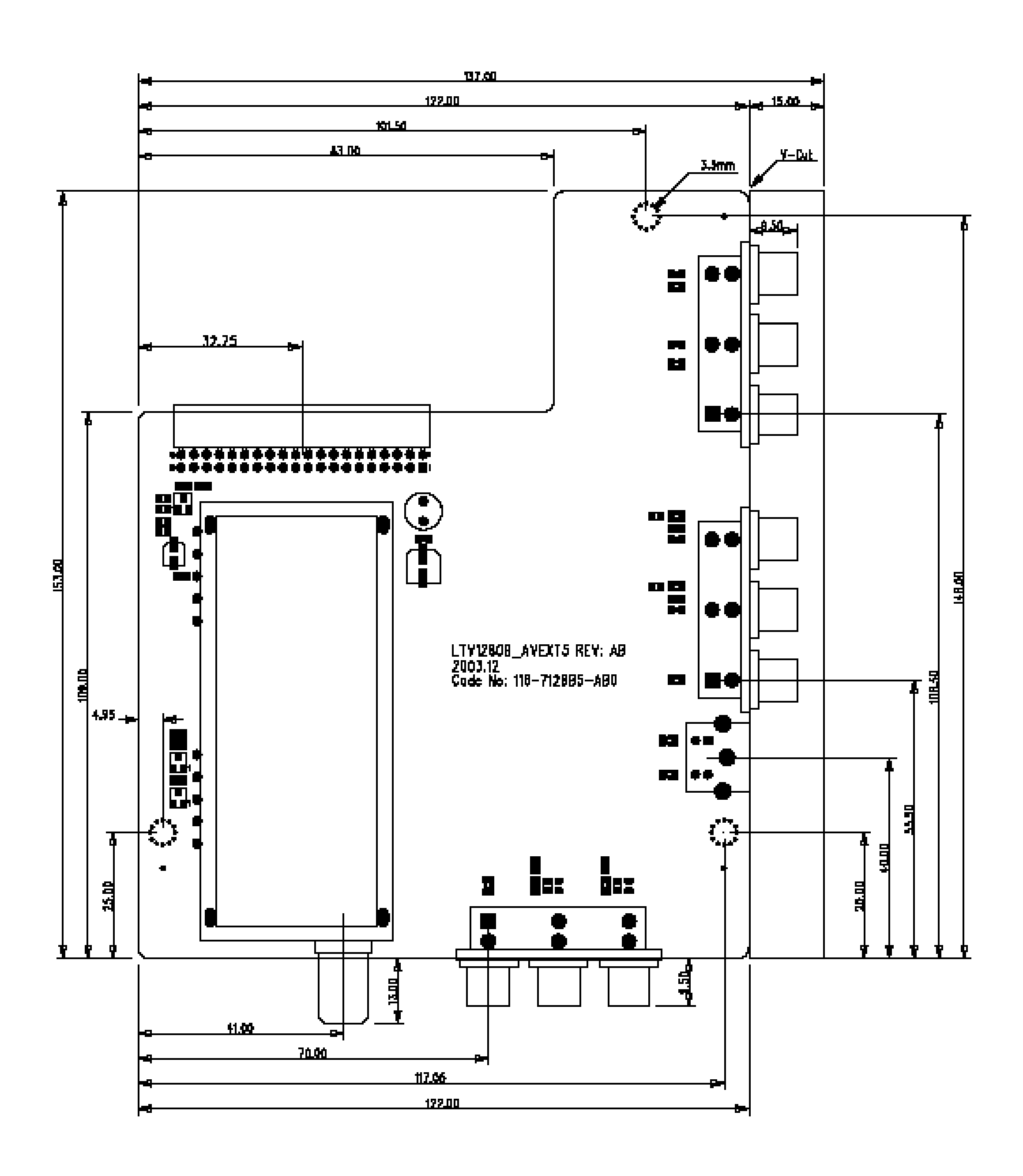
L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
			SMD COMPONENT					
ZD01,02	DIODE-ZENER	R0	SOT-23 15V	EA	2	KEC	Z02W15VY	0403-000673
ZD03	DIODE-ZENER	R0	SOT-23 5.1V	EA	1	KEC	Z02W5.1VY	0403-000676
IC01	IC-PWM	R0	NCP1203D6 60KHz S-08(SMD) 4.9*3.9mm	EA	1	ONSEMI	NCP1203D6	1203-003144
IC02,03	IC-SHUNT REG	R0 R1	431 SOT-23 3P SPX2431AM SOT-23	EA	2	FAIRCHILD SIPEX	KA431SAMF2TF SPX2431AM	1203-003080
IC04	IC-LINEAR AMP	R0	FLT(NBI) 8P KA358D	EA	1	FAIRCHILD	KA358D	1201-000166
Q01,04,05	TR-NPN	R0 R1	45V 800mA SOT-23	EA	3	FAIRCHILD KEC	KST2222ATF KTN2222AS	0501-000457
Q02,03	TR-PNP	R0 R1	-60V -600mA SOT-23	EA	2	FAIRCHILD KEC	KST2907ATF KTN2907AS	0501-000462
D01	DIODE-SWG		N.A					
D02,04,05,07	DIDOE-SWG	R0 R1	85V 100mA SOT-23	EA	4	KEC ROHM	KDS184 DAN202K	0407-000114
D03	DIODE-SWG	R0 R1	85V 100mA SOT-23 85V 100mA SOT-23	EA	1	KEC ROHM	KDS181 DAP202K	0407-000116
R01,02,03	RES-CHIP C	R0/R1	360K ohm 1/4W 5%	EA	3	SAMSUNG/TA-I	RC3216 J 364 CS	2007-000795
R06	RES-CHIP C	R0/R1	150 ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 151 CS	2007-000398
R07,14,37	RES-CHIP C	R0/R1	10K ohm 1/8W 5%	EA	3	SAMSUNG/TA-I	RC2012 J 103 CS	2007-000300
R08,55	RES-CHIP C	R0/R1	62 ohm 1/4W 5%	EA	2	SAMSUNG/TA-I	RC3216 J 620 CS	2007-001103
R09	RES-CHIP C	R0/R1	10 ohm 1/4W 5%	EA	1	SAMSUNG/TA-I	RC3216 J 100 CS	2007-000312
R10,32	RES-CHIP C	R0/R1	4.7K ohm 1/8W 5%	EA	2	SAMSUNG/TA-I	RC2012 J 472 CS	2007-000872
R11,12,42	RES-CHIP C	R0/R1	0 ohm 1/8W 5%	EA	3	SAMSUNG/TA-I	RC2012 J 000 CS	2007-000029
R13	RES-CHIP C	R0/R1	910 ohm 1/4W 5%	EA	1	SAMSUNG/TA-I	RC3216 J 911 CS	2007-001241

		PUB. DATE		SHEET NO	
MODEL NAME	HQL260WR/320WR	REV. DATE		PAGE REV.	

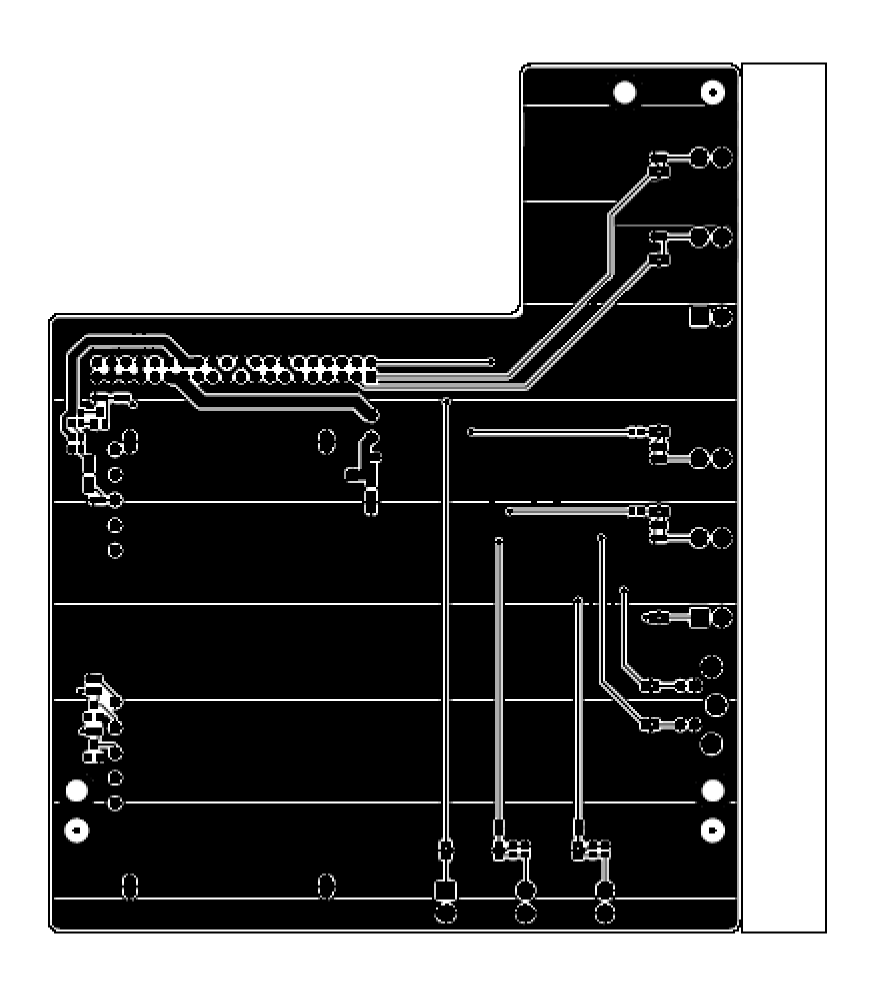
L-NO	DESCRIPTION	REF	SPECIFICATION	UNIT	QTY	VENDOR	VENDOR-PARTNAME	BOM-CODE
R15	RES-CHIP C	R0/R1	15K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 153 CS	2007-000409
R16,17,18,19	RES-CHIP C	R0/R1	82 ohm 1/4W 5%	EA	4	SAMSUNG/TA-I	RC3216 J 820 CS	2007-001219
R21	RES-CHIP MPS	R0 R1	5m ohm 1W 1% 5m ohm 1W 1%	EA	1	HMR VISHAY-DALE	MPS 1W 5mΩ F WSL2512 0.005Ω 1%	2007-008675
R22	RES-CHIP C	R0/R1	1K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 102 CS	2007-000468
R23	RES-CHIP C	R0/R1	3K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 302 CS	2007-000844
R24	RES-CHIP C	R0/R1	5.1K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 512 CS	2007-000964
R25,31	RES-CHIP C	R0/R1	20K ohm 1/8W 1%	EA	2	SAMSUNG/TA-I	RC2012 F 203 CS	2007-000543
R26	RES-CHIP C	R0/R1	56K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 563 CS	2007-001039
R27	RES-CHIP C	R0/R1	4.7K ohm 1/8W 1%	EA	1	SAMSUNG/TA-I	RC2012 F 472 CS	2007-000868
R28	RES-CHIP C	R0/R1	47K ohm 1/8W 1%	EA	1	SAMSUNG/TA-I	RC2012 F 473 CS	2007-000938
R29	RES-CHIP C	R0/R1	4.7K ohm 1/4W 5%	EA	1	SAMSUNG/TA-I	RC3216 J 472 CS	2007-000875
R30	RES-CHIP C	R0/R1	620 ohm 1/8W 1%	EA	1	SAMSUNG/TA-I	RC2012 F 621 CS	2007-001089
R38,39,40	RES-CHIP C		N.A					
R43	RES-CHIP C	R0/R1	2.4K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 242 CS	2007-000511
R44	RES-CHIP C	R0/R1	27K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 273 CS	2007-000653
R45	RES-CHIP C	R0/R1	100K ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 104 CS	2007-000277
R46,47,48	RES-CHIP C	R0/R1	560K ohm 1/4W 5%	EA	3	SAMSUNG/TA-I	RC3216 J 564 CS	2007-001027
R50	RES-CHIP C	R0/R1	10 ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 100 CS	2007-000308
R51	RES-CHIP C	R0/R1	100 ohm 1/8W 5%	EA	1	SAMSUNG/TA-I	RC2012 J 101 CS	2007-000290
R56,57	RES-CHIP C	R0/R1	22Kohm 1/4W 5%	EA	2	SAMSUNG/TA-I	RC3216 J 223 CS	2007-000589
R58,59	RES-CHIP C	R0/R1	3.6Kohm 1/4W 5%	EA	2	SAMSUNG/TA-I	RC3216 J 362 CS	2007-000705
C01	CAP-C MLCC		N.A					
C02,14	CAP-C MLCC	R0/R1/R2	471(470pF) 50V 2012 K	EA	2	SAMSUNG/TDK/PAN-OVEN	CL21 B 471 K BNC	2203-000943
C03	CAP-C MLCC	R0/R1/R2	121(120pF) 50V 2012 J	EA	1	SAMSUNG/TDK/PAN-OVEN	CL21 C 121 J BNC	2203-000316
C04,19	CAP-C MLCC	R0/R1/R2	104(100nF) 50V 2012 K	EA	2	SAMSUNG/TDK/PAN-OVEN	CL21 B 104 K BNC	2203-000206
C05	CAP-C MLCC	R0/R1/R2	202(2nF) 50V 2012 K	EA	1	SAMSUNG/TDK/PAN-OVEN	CL21 B 202 K BNC	2203-000691
C06,07,08	CAP-C MLCC	R0/R1/R2	562(5.6nF) 50V 2012 K	EA	3	SAMSUNG/TDA/PAN-OVEN	CL21 B 562 K BNC	2203-001036
C10	CAP-C MLCC	R0/R1/R2	102(1nF) 50V 2012 K	EA	1	SAMSUNG/TDK/PAN-OVEN	CL21 B 102 K BNC	2203-000455
C11	CAP-C MLCC	R0/R1/R2	222(2.2nF) 50V 2012 K	EA	1	SAMSUNG/TDK/PAN-OVEN	CL21 B 222 K BNC	2203-000495
C13	CAP-C MLCC	R0/R1/R2	224(220nF) 50V 2012 Z	EA	1	SAMSUNG/TDK/PAN-OVEN	CL21 F 224 Z BNC	2203-002392
C12,18,20,21 ,22,23,26	CAP-C MLCC	R0/R1/R2	105(1uF) 25V 2012 Z	EA	7	SAMSUNG/TDK/PAN-OVEN	CL21 F 105 Z ANC	2203-002793

- PCB Pattern -

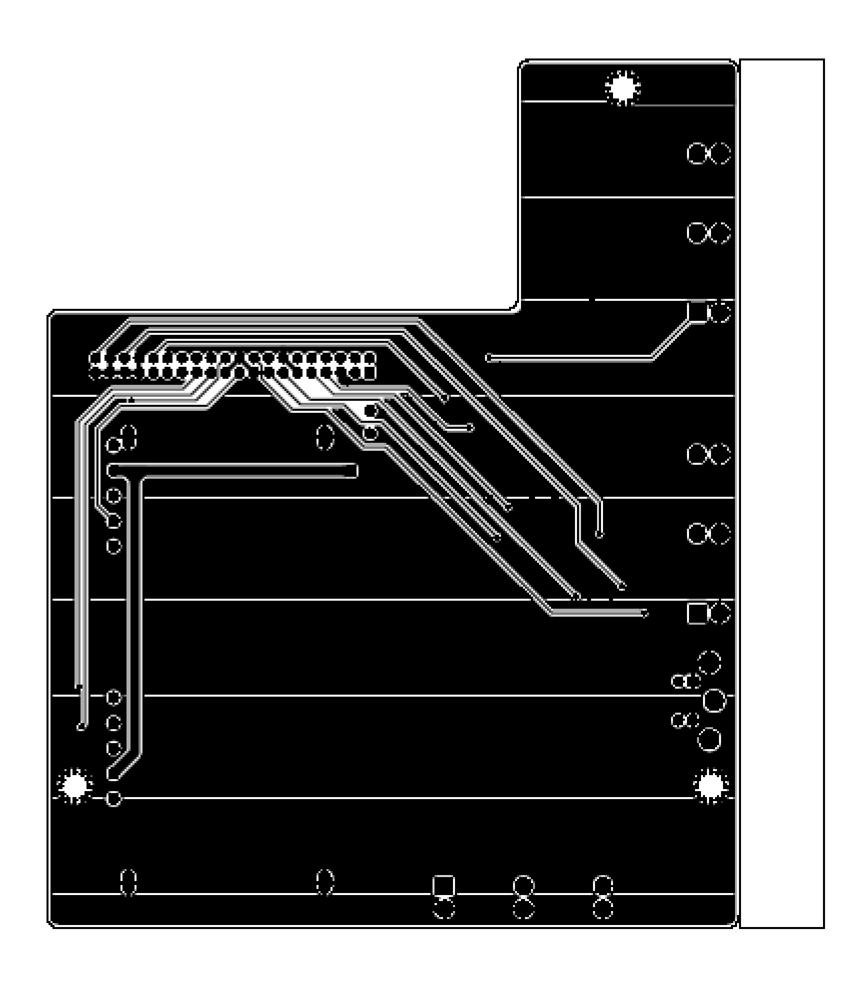
(1)ASSEMBLY DRAWING TOP



(2)ROUTING TOP

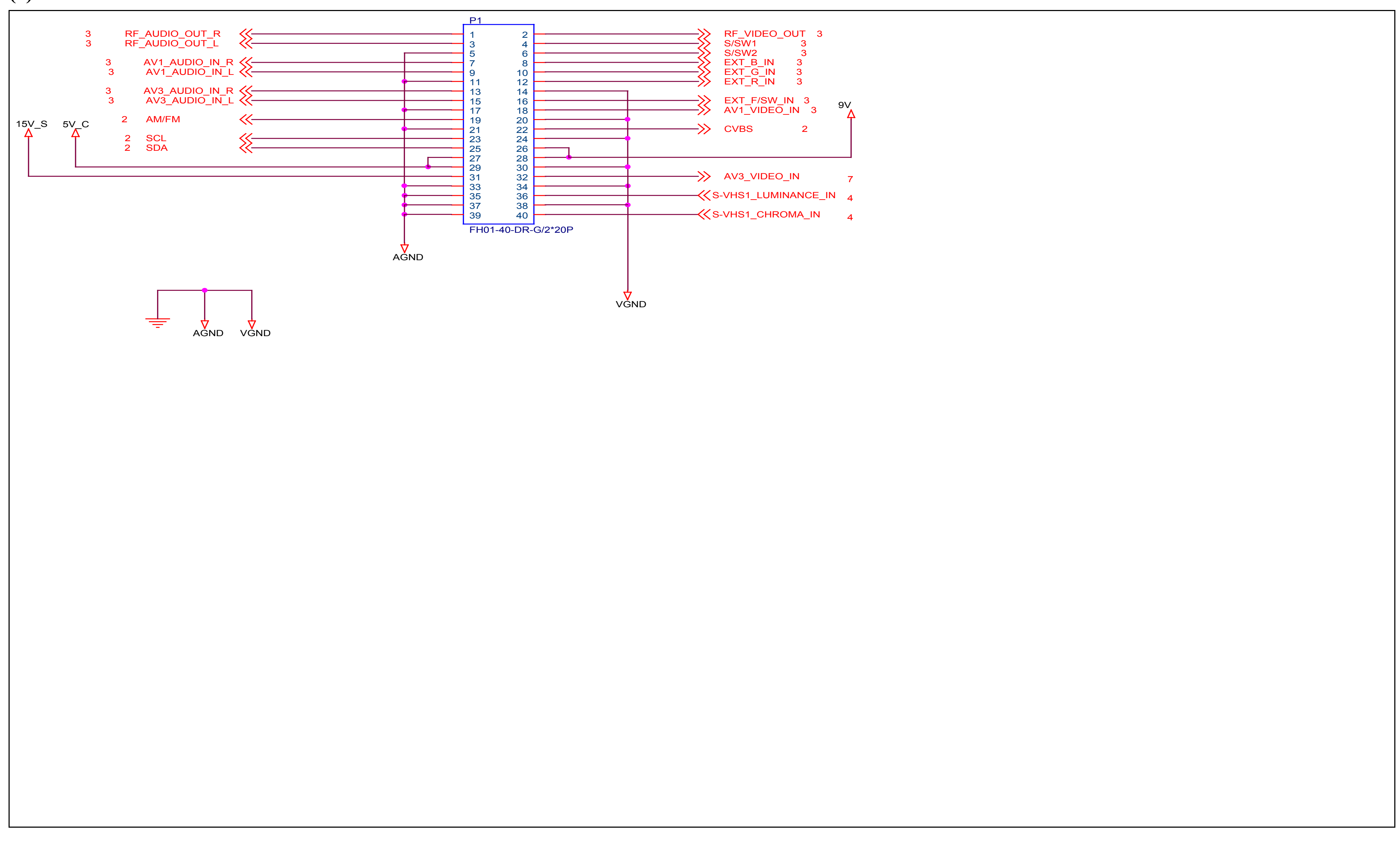


(3)ROUTING BOTTOM

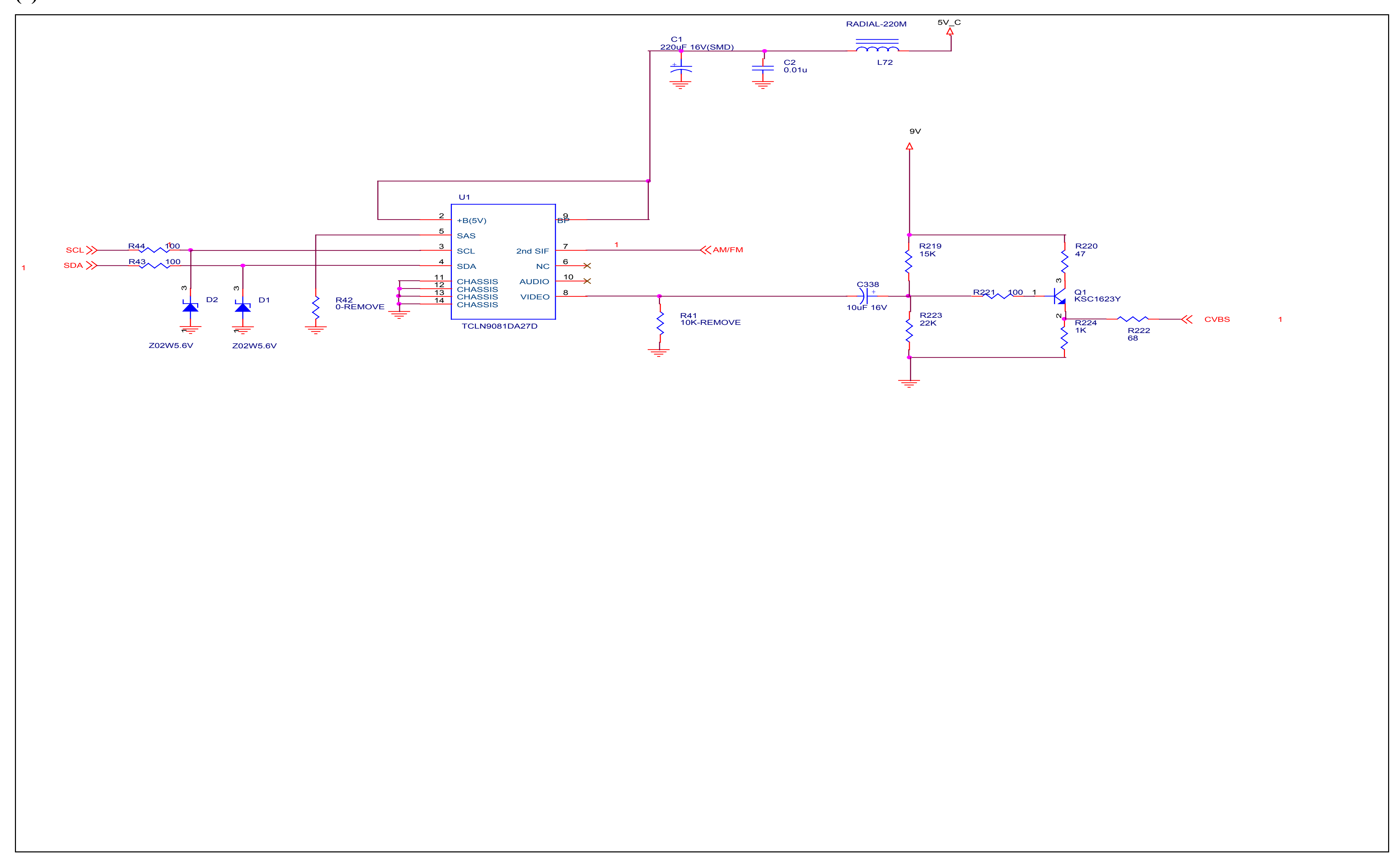


- Circuit Diagram -

(1)CONNECTOR

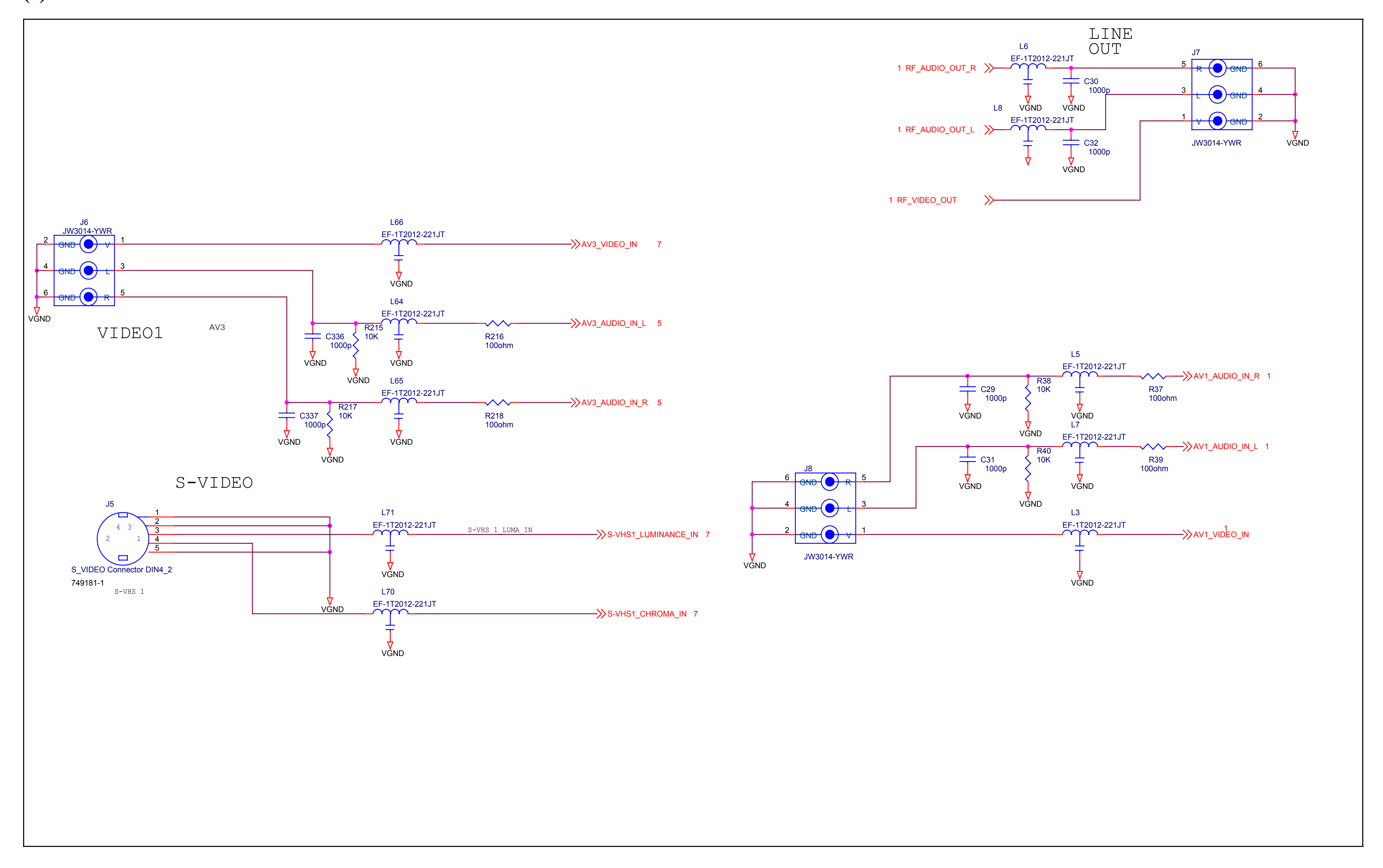


(2) I F



RADIAL-220M
5V_C
C1
220uF 16V(SMD)
C2
0.01u
L72
9V
U1
+B(5V)
SAS
SCL
SDA
CHASSIS
CHASSIS
CHASSIS
CHASSIS
BP
2nd SIF
NC
AUDIO
VIDEO
TCLN9081DA27D
SCL
SDA
R44 100
R43 100
D2
D1
Z02W5.6V
Z02W5.6V
R42
0-REMOVE
AM/FM
R41
10K-REMOVE
C338
10uF 16V
R219
15K
R220
47
R221 100
Q1
KSC1623Y
R223
22K
R224
1K
R222
68
CVBS

(3)JACK



LINE OUT
J7
JW3014-YWR
L6
EF-1T2012-221JT
L8
EF-1T2012-221JT
C30
1000p
C32
1000p
1 RF_AUDIO_OUT_R
1 RF_AUDIO_OUT_L
1 RF_VIDEO_OUT
VGND
J6
JW3014-YWR
VIDEO1
AV3
L66
EF-1T2012-221JT
AV3_VIDEO_IN 7
L64
EF-1T2012-221JT
C336
1000p
R215
10K
R216
100ohm
AV3_AUDIO_IN_L 5
L65
EF-1T2012-221JT
C337
1000p
R217
10K
R218
100ohm
AV3_AUDIO_IN_R 5
S-VIDEO
J5
S_VIDEO Connector DIN4_2
749181-1
S-VHS 1
L71
EF-1T2012-221JT
S-VHS 1 LUMA IN
S-VHS1_LUMINANCE_IN 7
L70
EF-1T2012-221JT
S-VHS1_CHROMA_IN 7
J8
JW3014-YWR
L5
EF-1T2012-221JT
C29
1000p
R38
10K
R37
100ohm
AV1_AUDIO_IN_R 1
L7
EF-1T2012-221JT
C31
1000p
R40
10K
R39
100ohm
AV1_AUDIO_IN_L 1
L3
EF-1T2012-221JT
AV1_VIDEO_IN 1

- BOM LIST -

CODE	TYPE	DESCRIPTION	QTY	VENDER	LOCATION
116-7128B5-AB0	작PCB SUB	LTV1280B AV EXT5.AB	1.000		
270-162300-200	TRANSISTER SOT-23	KSC1623Y	1.000		Q1
282-256000-200	DIODE ZENER SOT-23	Z02W5.6V	2.000		D1-2
300-101003-220	R-CARBON SMD	CR1608-101J	7.000		R37,R39,R43-44,R216,R218,R221
300-102003-220	R-CARBON SMD	CR1608-102J	1.000		R224
300-103003-220	R-CARBON SMD	CR1608-103J	4.000		R38,R40,R215,R217
300-153003-220	R-CARBON SMD	CR1608-153J	1.000		R219
300-223003-220	R-CARBON SMD	CR1608-223J	1.000		R223
300-470003-220	R-CARBON SMD	CR1608-470J	1.000		R220
300-680003-220	R-CARBON SMD	CR1608-680J	1.000		R222
320-1021E4-220	C-CERAMIC SMD	0603B102K500NT	6.000		C29-32,C336-337
320-1031E4-220	C-CERAMIC SMD	0603B103K500NT	1.000		C2
322-1061C5-212	C-EL SMD/85도	REV10uF16V 4*5	1.000		C338
322-2270J3-210	C-EL SMD	REV220uF16V 6.3*8	1.000		C1
340-220034-101	INDUCTOR RADIAL	22uH 03 TYPE	1.000		L72
340-220034-102	INDUCTOR RADIAL	22uH 03TYPE/SHD-2201	0.000		340-220034-101
344-221303-231	금EMI FERRITE SMD	EF-1T2012-221JT	0.000		
344-300003-231	LC FERRITE SMD	LC-2012-300JT	10.000		L3,L5-8,L64-66,L70-71
521-024000-110	HEADER BOX R/A	FH01-40-DR-G/2*20P	1.000		P1
530-310400-191	JACK RCA/ADDSHIELD	JW-3104S/Y,W,R/3P	3.000		J6-8
531-045004-101	MINI DIN JACK	MD24-4PSC5,4PIN	1.000		J5
766-9082D0-001	TUNER NTSC M	TCLN9081DA27D	1.000		U1

23.4

19.0

385±5

565±5

NOTE

GENERAL TOLERANCE	
X.	±0.38
.X	±0.25
.XX	±0.13
.XXX	±0.05

ANGLE TOLERANCE	
X°.	±3.0°
.X°	±2.0°
.XX°	±1.0°

DATA	2004. 03. 11	DWN	CHK	APP	ITEM: OSD BOARD ASS'Y
SCALE					
REV	02				
D NO	KSD-040225-01				

KSD CO., LTD.

M.SPEC	KPB-HD-0-0052
CODE NO	

KSD-F-D-035

A4(297*210)

CODE NO : 301 0700 918	OSD BOARD ASS'Y	M.SPEC.: KPB-HD-0-0052
MODEL: LT260WR/320WR		DATE : 2004. 03. 11

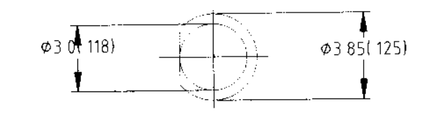
PART'S LIST

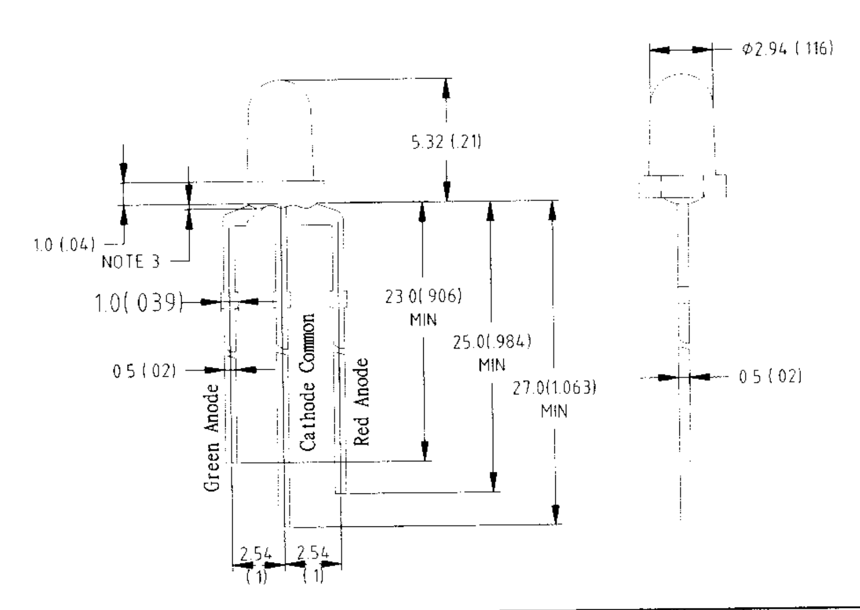
구분 / NO	DESCRIPTION	SPECIFICATION	Q'TY	VENDOR	LOCATION
1	PCB	FR-1 1.6T	1	FINE CIRCUIT	
2	TACT SWITCH	THVV502G/THV10910DG	7	POSTECH/TACT	POWER,UP,DOWE,RIGHT, LEFT,MENU,SOURCE
3	CERAIC CON,	104Z (0.1uF)	1	SAMHWA	C1
4	CABON RESISTOR	1kΩ	1	ABCO	R1
5	CABON RESISTOR	100kΩ	1	ABCO	R2
6	CABON RESISTOR	2.2kΩ	2	ABCO	R3,R5
7	CABON RESISTOR	10kΩ	2	ABCO	R4,R7
8	CABON RESISTOR	5.6kΩ	1	ABCO	R6
9	LED	LL-309IGM2E-012/HO	1	LUCKY LIGHT	D1
10	IR	KSM-903TM2T,ROM-N338TM2	1	GODENSI,RAYTRN	U1
11	HARNESS	5P 7P, 565mm/3P 4P,385 (KHC-HD-0-0113)	1	KSD	CN1,CN2
12	SUPPORT RUBBER	5X6X3T	1	JAEHYUN	

Features:

- Standard T-1 diameter package
- General purpose leads
- Reliable and rugged

Package Dimensions:





Part NO.	Chip Material		Lens Color	Source Color
LL-309IGM2E-012 /H0	Red	Green	White Diffused	Red & Green
	GaAsP	GaP		

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25 mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm(.04") max
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.
6. This data-sheet only valid for six months.



Absolute Maximum Ratings at Ta=25℃

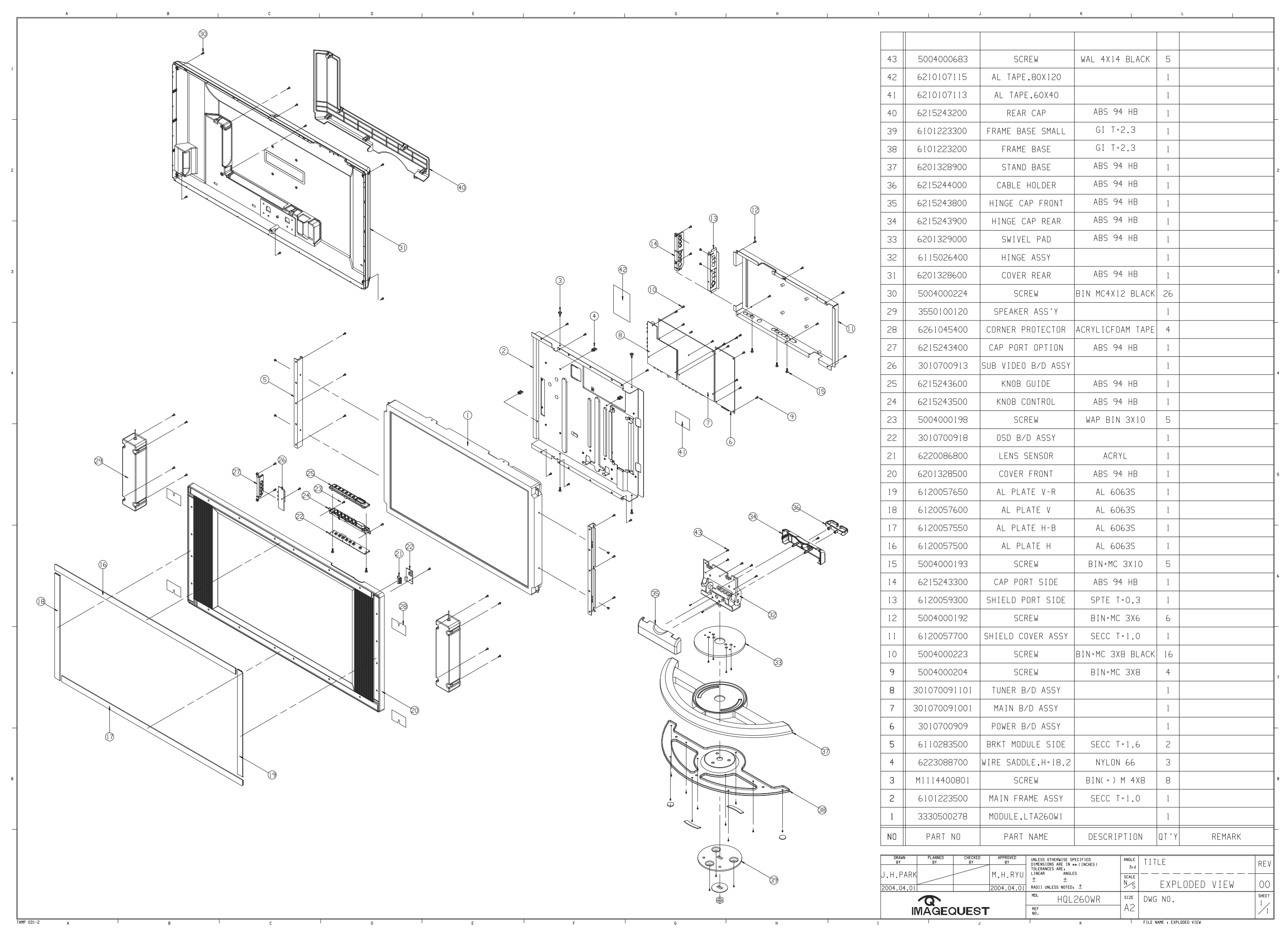
Parameter	MAX.	Unit
Power Dissipation	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	100	mA
Continuous Forward Current	35	mA
Derating Linear From 50℃	0.4	mA/℃
Reverse Voltage	5	V
Operating Temperature Range	-40℃ to +80℃	
Storage Temperature Range	-40℃ to +80℃	
Lead Soldering Temperature [4mm(.157") From Body]	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

Parameter	Symbol	Emitting Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I_v	Green	20	45	90	mcd	I_f=20mA Note 1
		Red	12	30	60		
Viewing Angle	$2\theta_{1/2}$	Green	75	80	85	Deg	Note 2
		Red	75	80	85		
Peak Emission Wavelength	λp	Green	563	568	573	nm	Measurement @Peak
		Red	635	640	645		
Dominant Wavelength	λd	Green	565	570	575	nm	Note 3
		Red	625	630	635		
Spectral Line Half-Width	$\Delta\lambda$	Green	25	30	35	nm	
		Red	35	40	45		
Forward Voltage	V_f	Green	1.7	2.2	2.6	V	I_f=20mA
		Red	1.6	2.0	2.5		
Reverse Current	I_R	Green	—	---	100	μA	V_R=5V
		Red					

Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength (λ d) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.



NO	PART NO	PART NAME	DESCRIPTION	QT'Y	REMARK
43	5004000683	SCREW	WAL 4X14 BLACK	5	
42	6210107115	AL TAPE,80X120		1	
41	6210107113	AL TAPE,60X40		1	
40	6215243200	REAR CAP	ABS 94 HB	1	
39	6101223300	FRAME BASE SMALL	GI T=2.3	1	
38	6101223200	FRAME BASE	GI T=2.3	1	
37	6201328900	STAND BASE	ABS 94 HB	1	
36	6215244000	CABLE HOLDER	ABS 94 HB	1	
35	6215243800	HINGE CAP FRONT	ABS 94 HB	1	
34	6215243900	HINGE CAP REAR	ABS 94 HB	1	
33	6201329000	SWIVEL PAD	ABS 94 HB	1	
32	6115026400	HINGE ASSY		1	
31	6201328600	COVER REAR	ABS 94 HB	1	
30	5004000224	SCREW	BIN MC4X12 BLACK	26	
29	3550100120	SPEAKER ASS'Y		1	
28	6261045400	CORNER PROTECTOR	ACRYLICFOAM TAPE	4	
27	6215243400	CAP PORT OPTION	ABS 94 HB	1	
26	3010700913	SUB VIDEO B/D ASSY		1	
25	6215243600	KNOB GUIDE	ABS 94 HB	1	
24	6215243500	KNOB CONTROL	ABS 94 HB	1	
23	5004000198	SCREW	WAP BIN 3X10	5	
22	3010700918	OSD B/D ASSY		1	
21	6220086800	LENS SENSOR	ACRYL	1	
20	6201328500	COVER FRONT	ABS 94 HB	1	
19	6120057650	AL PLATE V-R	AL 6063S	1	
18	6120057600	AL PLATE V	AL 6063S	1	
17	6120057550	AL PLATE H-B	AL 6063S	1	
16	6120057500	AL PLATE H	AL 6063S	1	
15	5004000193	SCREW	BIN+MC 3X10	5	
14	6215243300	CAP PORT SIDE	ABS 94 HB	1	
13	6120059300	SHIELD PORT SIDE	SPTE T=0.3	1	
12	5004000192	SCREW	BIN+MC 3X6	6	
11	6120057700	SHIELD COVER ASSY	SECC T=1.0	1	
10	5004000223	SCREW	BIN+MC 3X8 BLACK	16	
9	5004000204	SCREW	BIN+MC 3X8	4	
8	301070091101	TUNER B/D ASSY		1	
7	301070091001	MAIN B/D ASSY		1	
6	3010700909	POWER B/D ASSY		1	
5	6110283500	BRKT MODULE SIDE	SECC T=1.6	2	
4	6223088700	WIRE SADDLE,H=18.2	NYLON 66	3	
3	M1114400801	SCREW	BIN(+) M 4X8	8	
2	6101223500	MAIN FRAME ASSY	SECC T=1.0	1	
1	3330500278	MODULE,LTA260W1		1	

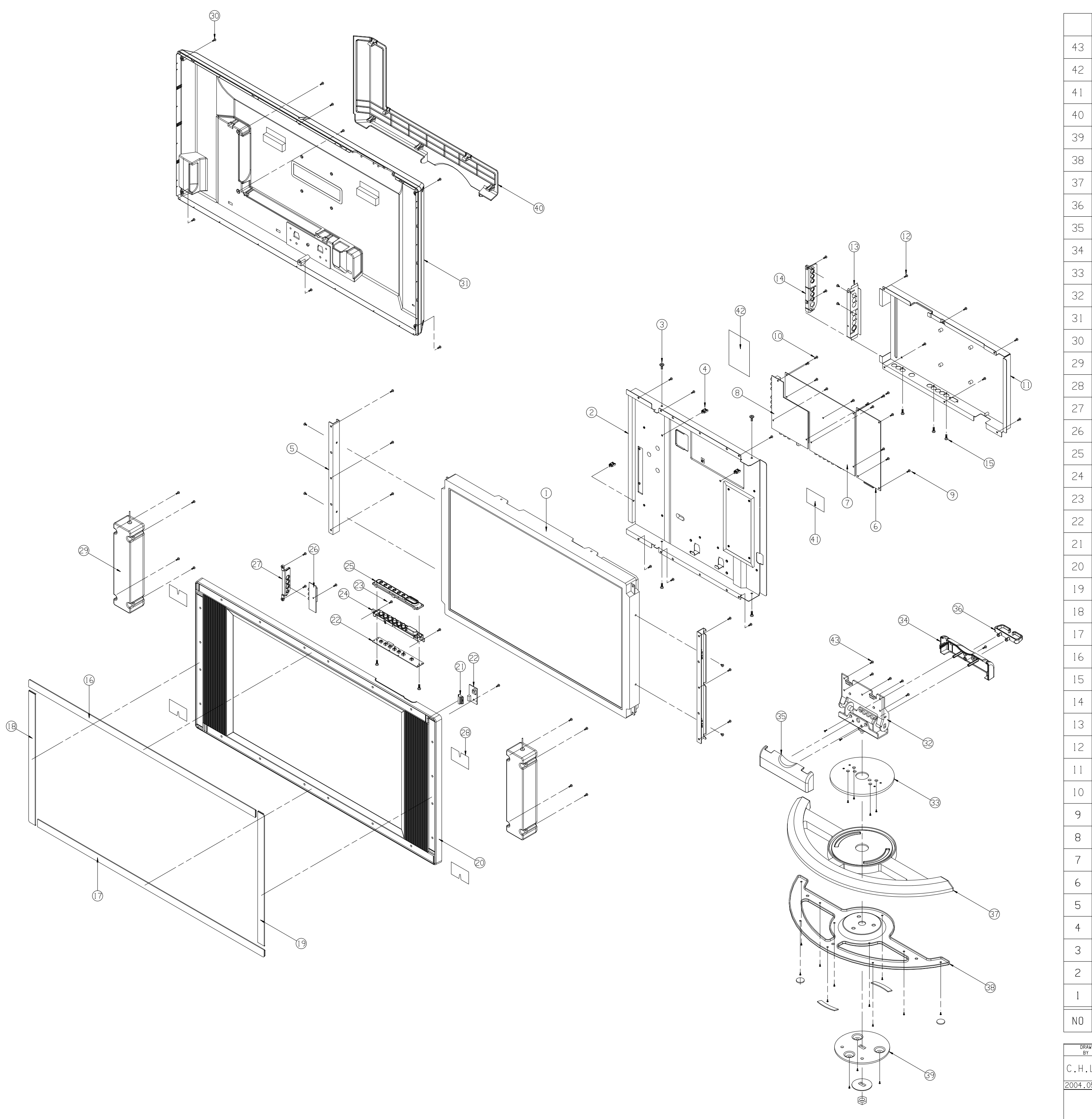
DRAWN BY	PLANNED BY	CHECKED BY	APPROVED BY
J.H.PARK			M.H.RYU
2004.04.01			2004.04.01

IMAGEQUEST

ANGLE	3rd
SCALE	N/S
TITLE	EXPLODED VIEW
REV	00
MDL	HQL260WR
REF NO.	
SIZE	A2
DWG NO.	
SHEET	1/1

TAMP 031-2

FILE NAME : EXPLODED VIEW



NO	PART NO	PART NAME	DESCRIPTION	QT'Y	REMARK
43	5004000683	SCREW	WAL 4X14 BLACK	5	
42	6210107115	AL TAPE,80X120		1	
41	6210107113	AL TAPE,60X40		1	
40	6215244700	REAR CAP	ABS 94 HB	1	
39	6101223300	FRAME BASE SMALL	GI T=2.3	1	
38	6101223200	FRAME BASE	GI T=2.3	1	
37	6201328900	STAND BASE	ABS 94 HB	1	
36	6215244000	CABLE HOLDER	ABS 94 HB	1	
35	6215243800	HINGE CAP FRONT	ABS 94 HB	1	
34	6215243900	HINGE CAP REAR	ABS 94 HB	1	
33	6201329000	SWIVEL PAD	ABS 94 HB	1	
32	6115026400	HINGE ASSY		1	
31	6201332000	COVER REAR	ABS 94 HB	1	
30	5004000224	SCREW	BIN MC4X12 BLACK	26	
29	3550100120	SPEAKER ASS'Y		1	
28	6261045400	CORNER PROTECTOR	ACRYLICFOAM TAPE	4	
27	6215243400	CAP PORT OPTION	ABS 94 HB	1	
26	3010700913	SUB VIDEO B/D ASSY		1	
25	6215243602	KNOB GUIDE	ABS 94 HB	1	
24	6215243500	KNOB CONTROL	ABS 94 HB	1	
23	5004000198	SCREW	WAP BIN 3X10	5	
22	3010700918	OSD B/D ASSY		1	
21	6220087100	LENS SENSOR	ACRYL	1	
20	6201331900	COVER FRONT	ABS 94 HB	1	
19	6120059150	AL PLATE V-R	AL 6063S	1	
18	6120059100	AL PLATE V	AL 6063S	1	
17	6120059050	AL PLATE H-B	AL 6063S	1	
16	6120059000	AL PLATE H	AL 6063S	1	
15	5004000193	SCREW	BIN+MC 3X10	5	
14	6215243300	CAP PORT SIDE	ABS 94 HB	1	
13	6120059300	SHIELD PORT SIDE	SPTE T=0.3	1	
12	5004000192	SCREW	BIN+MC 3X6	6	
11	6120059200	SHIELD COVER ASSY	SECC T=1.0	1	
10	5004000223	SCREW	BIN+MC 3X8 BLACK	16	
9	5004000190	SCREW	BIN+MC 3X8	4	
8	301070091101	TUNER B/D ASSY		1	
7	301070091001	MAIN B/D ASSY		1	
6	——	POWER B/D ASSY		1	
5	6110285300	BRKT MODULE SIDE,LT320W	SECC T=1.6	2	
4	6223088700	WIRE SADDLE,H=18.2	NYLON 66	3	
3	M1114400801	SCREW	BIN(+) M 4X8	8	
2	6101226500	MAIN FRAME ASSY	SECC T=1.2	1	
1	——	MODULE,LTA320W1		1	

DRAWN BY	PLANNED BY	CHECKED BY	APPROVED BY	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN mm (INCHES) TOLERANCES ARE: LINEAR ± ANGLES ± RADII UNLESS NOTED: ±	ANGLE 3rd	TITLE EXPLODED VIEW	REV 00
C.H.LEE 2004.05.28			M.H.RYU 2004.05.28	MDL HQL320WR	SCALE N/S; SIZE A2	DWG NO.	SHEET 1/1
IMAGEQUEST				REF NO.			